FORM ADM-49

1.933

STANDARDS

for

REA MAPPING

MAY 21, 1945

U. S. DEPARTMENT OF AGRICULTURE
US.RURAL ELECTRIFICATION ADMINISTRATION

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BOOK NUMBER 1.933 St2S

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1. Purpose and Plan

a. Purpose:

The purpose of these standards is not only to provide a systematic plan for preparing maps that record those physical and cultural features and elements which influence or control the characteristics and extent of an REA-financed borrower's system but also to provide a means whereby a borrower may correlate its plans with the plans of adjacent borrowers thereby providing a basis for furthering the objectives of rural electrification.

b. General Plan: (4) d. b squarents at bediroseb restruit as (ant

From the point of view of the Rural Electrification Administration, these standards embody those minimum requirements that distinguish good mapping practices. The State Index Map, furnished by the REA, forms the basis of the coordination and indexing which is ultimately reflected in the map of the system and in each map showing a part of the system in detail. Such coordination and indexing is fixed with respect to state boundaries and with respect to terrestrial meridians of longitude and parallels of latitude, the only fixed coordinates that are generally applicable to standardization of mapping.

2. Application of Standards

a. Original Mapping:

These standards shall apply to all maps required to be furnished to REA by an applicant or borrower provided that:

(1) In applying for a loan, the applicant may, for reasons of economy or speed, elect to use existing maps on which can be superimposed all data necessary for preallotment purposes;

4. General Specifications

- (2) In the mapping of additions to a system, if a borrower has, in the opinion of the Administrator, satisfactory maps which are complete and accurate for all parts of its existing system previously prepared in accordance with standards other than those herein designated, the borrower may continue to use such other standards for these additions;
- (3) The torrower may prepare maps covering special conditions, other than those covered in these standards, by using other standards satisfactory to the Administrator.

b. Remapping of Existing Systems: to gate told a set award ad of

- (1) These standards shall apply to all remapping of REA financed systems;
 - (2) In no event shall these standards be construed to require that a REA-financed borrower remap its system or any portion thereof.

3. Definitions

a. State Index Map:

A State Index Map is a map of a state divided into 1° quadrangles numbered consecutively and subdivided and numbered as further described in paragraph 4, a "General Specifications".

b. Key Map: The stand a Malbivora gourney assessed tarrelles

A Key Map is a map showing a borrower's system (proposed or existing), as further described in paragraph 4,b (3), "General Specifications".

c. Detail Map:

A Detail Map is one of a series of maps showing the appropriate physical and cultural detail of a part of a borrower's system as further described in paragraph 4,c (3), "General Specifications".

d. Town Map: Man was a state and the state and has abusined to

A Town Map is a Detail Map showing one or more rural community areas as further described under paragraph 4,d "General Specifications".

respect to wrete boundaries and with respect to terre-

4. General Specifications

a. State Index Map:

A State Index Map is divided into 1° quadrangles. These quadrangles are bounded by lines of latitude and longitude and are boldly indicated on the map. In addition, each quadrangle is identified with a number which is the key number for all Detail and Key Maps of that state. A typical quadrangle of the State Index Map is divided into Detail Map areas, that is, divisions, according to the divisions shown under "Indexing", "Detail Maps", paragraph 4,c (5), "General Specifications". (State Index Maps are furnished by the REA to borrowers or consulting engineers upon request.)

b. Key Map:

(1) Type and Size:

A Key Map should cover two or more divisions representing "Detail Map" areas or divisions. The features and elements to be required to be shown for a Key Map should be complete for each division. Preferably, Key Maps shall be rectangular in shape, and it is desirable that the size of each sheet comprising a Key Map should not exceed 4 feet by 4 feet.

(2) in no event shall these standards be construed to receive that

a REA-financed borrower remap its switch or any portion thereof.

(2) Scale:

The scale shall preferably be 1/2 inch equals one mile. However, if more practicable, it may be 1 inch equals one mile or multiple of 1 inch. If the sheet size, using a scale of 1/2 inch equals one mile, becomes much greater than 4 feet by 4 feet, the scale may be reduced to 1/4 inch equals one mile. However, rather than reduce the scale to 1/4 inch equals one mile, it is preferable to use two or more sheets for the Key Map.

(3) Boundaries and Cultural and Physical Features:

The Key map shall show and designate:

- (a) All Federal and State Kighways, and County Roads
- (b) All Rivers
 - (c) All Reilroads
 - (d) All Range, Township lines, and other major land subdivisions
 - (e) All County Lines
 - (f) All boundaries of incorporated municipalities
 - (e) Such other physical features which might greatly affect the location of electric power lines such as lakes, hills and mountain ranges, etc.
 - (h) All REA-finenced, and all other private, public and municipal transmission lines in the area
 - (i) All private, public and municipal distribution lines in the area outside incorporated municipalities
- (j) All substations, all REA borrowers' primary metering points
 - (k) All borrowers' existing distribution lines

(4) Projection:

Polyconic Projection shall be used on all Key Maps, and such information may be copied from available maps compiled by any agency, or computed from projection tables embodied in "Formulas and Tables for the Construction of Polyconic Projections," W.S.G.S. Bulletin No. 809 compiled by C. H. Birdseye. Copies of this bulletin may be purchased from the Superintendent of Documents, U. S. Government, Washington, D. C. et \$0.25 each. Similar publications may be found in mapping supply stores.

(5) Indexing:

Each 1° line of latitude and longitude shall be shown and each 1° quadrangle numbered to correspond with the number shown on the State Index Map. Each Key Map shall show all Detail Map divisions by lines of latitude and longitude as indicated in the typical 1° quadrangles, as shown on State Index Maps, and shall be numbered as shown for each Detail Map division.

(6) Drafting:

All drafting shall conform to accepted standards. All lines shall be clean and uniform, and all cartographic details shall be cleancut. Appropriate symbols as shown on "Style Sheet", Form DS-115, applicable to Key Maps shall be used. Municipalities shall be shown by a cross-hatched border indicating the corporate limits of the town. The ownership of all power lines, exclusive of those owned by an REA-financed borrower, shall be shown by indicating on the map ownership of such lines not less frequently than every 12' inches. Transformer size and voltage shall be shown at substations. Borrowers' existing lines shall be shown in proper relation to roads or highways. Example: If a line follows a road and is built on the east side of the road, it should appear on the east side of the road on the Key Map. The Key Map shall be provided with trim line, border line, neat line, title block, revision block, and binding edge as shown on "Style Sheet", DS-115. The scale of the Key Map shall be drafted in the same location on the sheet as shown on "Style Sheet", Form DS-115, and indicated in inches instead of showing the bar scale. Any revision of a Key Map shall be properly noted and dated in the title block.

(7) Titles and Related Information:

The title "Key Map" shall appear in the title block in the same location as "Detail Map" shown on Sample Detail Map, Form DS-116. The title block shall show appropriate name of the borrower's system, name and address of engineer, date of map completion, state name, and key numbers of the area, Credit shall be given to any agency from whose information the Key Map has been compiled and such credit shall be shown under "Credit Note" as indicated on "Style Sheet".

c. Detail Maps:

(1) Type and Size:

(a) The standard size of all Detail Maps shall be 29" by 34" on trim line. The size of the standard tracing cloth sheet shall be 30" by 36". This provides space larger than 29" by 34" to facilitate the trimming of prints to actual size of 29" by 34". This sheet also provides a mapping area, neat line to neat line, of 25" by 30", which remains constant. The mapping area between neat lines shall be divided into 100 equal subdivisions, numbered from 1 to 100 as shown on "Sample Map", Form DS-116, These maps shall conform to "State Index Map", "Style Sheet" and "Sample Map",

(2) Scale:

All Detail Maps shall be compiled and drafted to a scale of 1 inch = 2000 feet.

(3) Boundaries, Cultural and Physical Features:

- (a) In addition to the boundaries, cultural and physical features required for Key Maps under 4 (b) sub-paragraph 3, Detail Maps shall show and designate:
 - 1. All telegraph, telephone or signal lines in the area
 - 2. The location of all served consumers along REA lines in the borrower's area; the lines of all borrowers, other than the borrower named in the title block, shall be identified by a block number placed at the end of each main line or tap (See Style Sheet)
 - 3. All potential consumers in the area
 - 4. The location and size of all borrowers' transformers in the area
 - 5. The location of such other electric facilities in the area as might affect the system design
 - 6. The location of sectionalizing devices by proper symbol (See Style Sheet)

(4) Projection:

The Polyconic Projection shall be used to compile all Detail Maps. Each Detail Map from 19° N. latitude to 39° N. latitude shall cover an area of 7½ minutes of latitude and 10 minutes of longitude. All Detail Maps north of 39° latitude to the 50th parallel shall be 7½ minutes of latitude by 12 minutes of longitude (See Paragraph 5, under 4 c, "Indexing"). Projection tables for the purpose of compiling each Detail Map are embodied in "Formulas and Tables for the Construction of Polyconic Projections", U.S.G.S. Bulletin No. 809, compiled by C. H. Birdseye. Copies of this bulletin may be purchased from the Superintendent of Documents, U.S. Government, Washington, D.C. at \$0.25 each. Similar publications may be found in mapping supply stores.

Note: In cases of emergency or when tables are not readily ravailable, REA will furnish the information for a specific area upon request.

(5) Indexing:

This indexing does not cover the territory of Alaska. Each Detail Map shall be indexed to conform to the standard as shown on "State Index Maps". The identification of adjacent Detail Maps shall be indicated on each Detail Map as shown on "Sample Map", Form DS-116. The following are the standards for guidance in indexing 1° quadrangles:

Typical 1º Quadrangle of a State Index Map 19º to 39º N. Latitude

| 7½ Minutes | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|----------|------|--------|----|----|----|
| | 7 | 8 | 9 | 10 | 11 | 12 |
| | 13 | 14 | 15 | 16 | 17 | 18 |
| | 19 | 20 | 21 | 22 | 23 | 24 |
| | 25 | 26 | 27 | 28 | 29 | 30 |
| | 31 | 32 | 33 | 34 | 35 | 36 |
| | 37 | 38 | 39 | 40 | 41 | 42 |
| | 43 | 44 | 45 | 48 | 47 | 48 |
| | | | | | | 1 |
| | | 10 N | linute | es | | |

Typical 1° Quadrangle of a State Index Map 39° to 50° N. Latitude

| 7½ Minutes ——— | 1 | 2 | 3 | 4 | 5 |
|----------------|----|------|-------|-----|----|
| | 6 | 7 | 8 | 9 | 10 |
| | 11 | 12 | 13 | 14 | 15 |
| | 16 | 17 | 18 | 19 | 20 |
| | 21 | 22 | 23 | 24 | 25 |
| | 26 | 27 | 28 | 29 | 30 |
| | 31 | 32 | 33 | 34 | 35 |
| | 36 | 37 | 38 | 39 | 40 |
| | | | | | 17 |
| | | 12 M | inute | s — | |

Note: This indexing covers only that area between 19° and 50° North Latitude. Index information for other areas will be furnished by REA upon request.

(6) Title and Related Information:

All information such as main title "Detail Map", name of borrower, location of borrower's office, designation of borrower's system, name and address of borrower's engineer, date of map compilation, state name, Key and Detail Map numbers of the area, and the scale shall be shown as indicated on "Sample Map", Form DS-116. Credit shall be given to any agency when its maps have been used in the compilation of Detail Maps. Such credit shall be shown in the space provided. (See "Credit Note" on "Sample Map" Form DS-116).

Example: Compiled from Missouri State Highway Planning Survey
Maps, dated October 1941, Scale 1 inch = 1 mile.

(7) Relief;

- (a) Contours will be shown if specified in contract. Few areas will require a contour map. (See Style Sheet),
- (b) Mountain ranges and mountain peaks shall be shown by hachures in accordance with the standard symbol shown on "Style Sheet".
- (c) Important cliffs and mesas shall be shown by standard symbol as indicated on "Style Sheet".

(8) Overlap:

Overlap shall be provided by extending all details from the geographic limits to the next line of each map, with the exception of relief, electrical data, and consumer location.

(9) Drafting:

All drafting shall be in accordance with "Sample Map" and "Style Sheet", and shall conform to accepted standards. Lines shall be neatly and accurately drawn. Lettering shall be clear, and place names should be correctly spelled. In the mapping of areas south of latitude 39°, meridians shall be indicated by drafting them on the maps every 5 minutes. In the mapping of areas north of latitude 39°, meridians shall be indicated by drafting them on the maps every 6 minutes. Parallels of latitude shall be indicated by drafting them on the maps every 2½ minutes; all latitude and longitude designations to be drafted as shown on "Sample Map". Any revision of a Detail Map shall be properly noted and dated in the title block.

d. Town Maps:

Town Maps shall be drawn in accordance with previously described requirements for Detail Maps, except that the scale should not be greater than 1 inch-= 200 feet. One meridian of longitude and one parallel of latitude shall be drawn through the town area and appropriately numbered.

Attachments:

- 1 DS-115 "Style Sheet", reduced size
- 1 DS-116 "Sample Map", reduced size

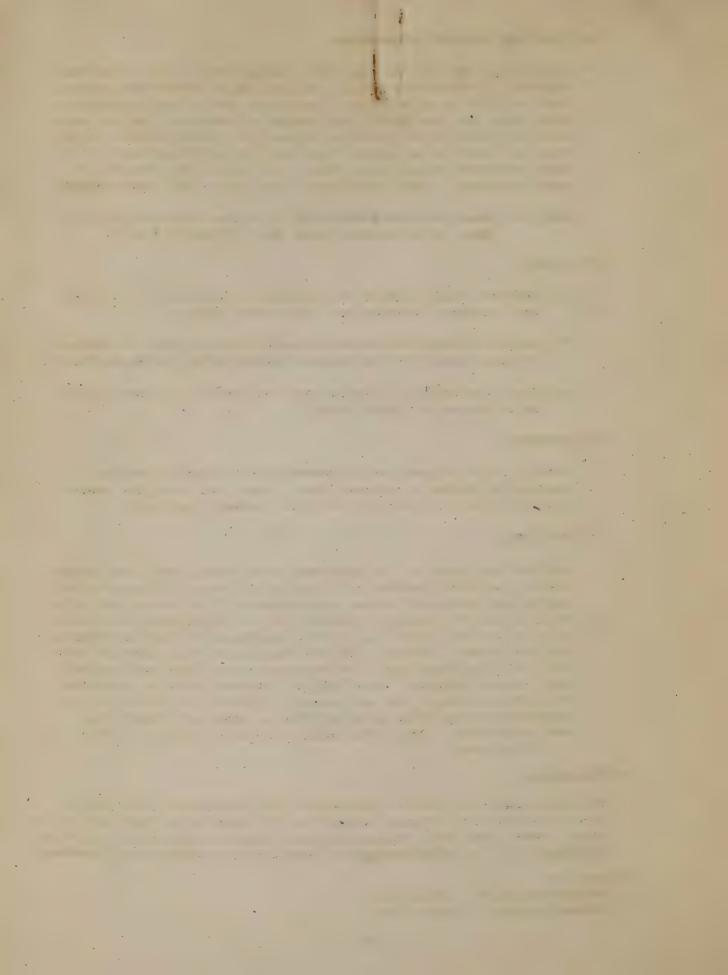


Table 4.—Coordinates for the projection of maps, scale 24000—Continued

| | | | Abscia | ssas of dev | veloped p | arallel | | Ordinates of develo | ped parall | ieland |
|------|--|---|---|---|---|---|--|---|--|---|
| tu | ati- ide of rallel | | | Longitud | e interval | | | Latitude and longi- | Merid- | Ordi- nate |
| | | 1' | 11/4" | 2}4′ | 33/4' | 5′ | 71/2' | tude intervals | ional distance | of de- veloped parallel |
| 0 18 | 00 02½ 03¾ 05 07½ | Inches 2. 895 . 895 . 894 . 894 . 893 | Inches 3. 619 . 618 . 618 . 618 . 617 | Inches 7. 239 . 237 . 236 . 235 . 234 | Inches 10. 858 . 855 . 854 . 853 . 850 | Inches 14. 477 . 474 . 472 . 471 . 467 | Inches 21. 716 . 711 . 708 . 706 . 701 | For latitude 18° 614 | 15. 129 | Inch 0.000 001 002 003 005 |
| | 10 1114 1232 15 1734 1834 | 2. 893 . 892 . 892 . 891 . 891 | 3.616 .616 .615 .614 .613 | 7. 232 . 231 . 230 . 228 . 227 . 226 | 10. 848 847 . 845 . 843 . 840 . 839 | 14. 464 . 462 . 460 . 457 . 453 . 452 | 21. 696 . 693 . 690 . 685 . 680 . 678 | 10 123/2 | 30. 259 37. 824 45. 388 | . 013 . 020 . 029 |
| | 20 22½ 25 26¼ 27½ | 2. 890 . 889 . 889 . 888 . 888 | 3. 612 . 612 . 611 . 610 | 7. 225 . 223 . 222 . 221 . 220 | 10. 837 . 835 . 832 . 831 . 830 | 14. 450 . 447 . 443 . 441 . 440 | 21. 675 . 670 . 665 . 662 . 659 | For latitude 19° 6 6 10 10 12 12 12 12 12 12 12 12 12 12 12 12 12 | 15. 131 18. 914 22. 697 30. 262 | . 001 . 002 . 003 . 005 . 008 . 014 |
| | 30 32½ 33¾ 35 37½ | 2. 887 . 887 . 886 . 886 . 885 | 3, 609 . 608 . 608 . 607 . 606 | 7. 218 . 216 . 215 . 215 . 213 | 10. 827 . 824 . 823 . 822 . 819 | 14. 436 . 433 . 431 . 429 . 426 | 21. 654 . 649 . 646 . 644 . 638 | 1157 | 45. 393 | 0.000 |
| | 40 4114 421/3 45 471/4 483/4 | 2. 884 . 884 . 884 . 883 . 882 . 882 | 3. 606 . 605 . 605 . 604 . 603 . 602 | 7. 211 . 210 . 209 . 208 . 206 . 205 | 10. 817 815 . 814 . 811 . 809 . 807 | 14. 422 . 420 . 419 . 415 . 411 . 410 | 21. 633 . 629 . 628 . 623 . 617 . 615 | For latitude 20° 61/4 71/2 10 121/2 15 | 15. 133 18. 916 22. 699 30. 265 | . 002 . 004 . 006 . 008 . 014 . 022 . 032 |
| | 50 52½ 55 56¼ 57½ | 2. 882 . 881 . 880 . 880 . 879 | 3. 602 . 601 . 600 . 600 . 599 | 7. 204 . 202 . 200 . 199 . 199 | 10. 806 : 803 : 801 : 799 : 798 | 14. 408 . 404 . 401 . 399 . 397 | 21. 612 . 607 . 601 . 598 . 596 | | <u> </u> | |
| 19 | 00 02½ 03¾ 05 07½ | 2. 879 . 878 . 878 . 877 . 877 | 3. 598 . 598 . 597 . 597 . 596 | 7. 197 . 195 . 194 . 193 . 191 | 10. 795 . 793 . 791 . 790 . 787 | 14. 394 . 390 - . 388 . 386 . 383 | 21. 591 . 585 . 582 . 580 . 574 | | | |
| | 10 1114 1212 15 1712 1884 | 2. 876 . 875 . 875 . 874 . 874 . 873 | 3. 595 . 594 . 594 . 593 . 592 . 592 | 7. 190 . 189 . 188 . 186 . 184 . 183 | 10. 784 . 783 . 782 . 779 . 776 | 14. 379 . 377 . 376 . 372 . 368 . 367 | 21. 569 . 566 . 563 . 558 . 553 . 550 | | | |
| • | 20 22½ 25 26¼ 27½ | 2. 873 . 872 . 872 . 871 . 871 | 3. 591 . 590 . 589 . 589 . 588 | 7. 182 . 181 . 179 . 178 . 177 | 10. 774 . 771 . 768 . 766 . 765 | 14. 365 . 361 . 357 . 356 . 354 | 21. 547 . 542 . 536 . 533 . 531 | | | |
| | 30 32½ 33¾ 35 37½ | 2. 870 . 869 . 869 . 869 . 868 | 3. 588 . 587 . 586 . 586 . 585 | 7. 175 . 173 . 172 . 171 . 169 | 10. 763 . 760 . 758 . 757 . 754 | 14. 350 . 346 . 345 . 343 . 339 | 21. 525 . 520 . 517 . 514 . 508 | | | |
| | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ⁸ / ₄ | 2. 867 . 867 . 866 . 866 . 865 . 865 | 3. 584 . 583 . 583 . 582 . 581 . 581 | 7. 168 . 167 . 166 . 164 . 162 . 161 | 10. 751 . 750 . 749 . 746 . 743 . 742 | 14. 335 . 333 . 332 . 328 . 324 . 322 | 21. 503 . 500 . 497 . 492 . 486 . 484 | | | |
| | 50 52½ 55 56¼ 57½ | 2. 864 . 863 . 863 . 862 . 862 | 3. 580 . 579 . 578 . 578 . 577 | 7. 160 . 158 . 156 . 156 . 155 | 10. 740 . 738 . 735 . 733 . 732 | 14. 321 .317 .313 .311 .309 | 21. 481 . 475 . 469 . 467 . 464 | | | |
| 20 | 00 | 2. 861 | 3 . 576 | 7. 153 | 10. 729 | 14. 305 | 21. 458 | | | |

104 TABLES FOR CONSTRUCTION OF POLYCONIC PROJECTIONS

Table 4.—Coordinates for the projection of maps, scale 24600—Continued

| | | | Abscis | sas of dev | eloped pa | rallel | | Ordinates of de- meridion | velop nal d | ed paralle istances | el and |
|---------|--|---|--|--|---|--|--|------------------------------|--|--|---|
| tuc | ati- le of allel | 1' | 11/4" | Longitude | interval | 5' | 71/2' | Latitude and lor | | Merid- ional distance | Ordi- nate of de- veloped parallel |
| 。 20 | 00 02½ 03¾ 05 07½ | Inches 2.861 .860 .860 .860 .859 | Inches 3. 576 . 575 . 575 . 574 . 574 | Inches 7. 153 . 151 . 150 . 149 . 147 | Inches 10. 729 . 726 . 725 . 723 . 721 | Inches 14. 305 . 302 . 300 . 298 . 294 | Inches 21. 458 . 452 . 450 . 447 . 441 | For latitude 20° | 11/4 21/2 38/4 5 61/4 71/2 | 10. 100 | Inch 0.000 .001 .002 .004 .006 .008 |
| | 10 111/4 121/2 15 171/2 183/4 | 2. 858 . 858 . 857 . 857 . 856 . 855 | 3. 573 . 572 . 572 . 571 . 570 . 569 | 7. 145 . 144 . 143 . 141 . 139 . 139 | 10. 718 . 713 . 715 . 712 . 709 . 708 | 14. 290 . 288 . 287 . 283 . 279 . 277 | 21. 436 . 433 . 430 . 424 . 418 . 416 | | 10 121/2 15 | 37. 832 45. 398 | 0.000 |
| | 20 22½ 25 26¼ 27½ | 2, 855 . 854 . 853 . 853 . 853 | 3. 569 . 568 . 567 . 566 . 566 | 7. 138 . 136 . 134 . 133 . 132 | 10. 706 . 703 . 701 . 699 . 698 | 14. 275 . 271 . 267 . 265 . 264 | 21. 413 . 407 . 401 . 398 . 395 | For latitude 21° | 11/4 21/2 33/4 5 61/4 71/2 10 121/2 | 18. 918 22. 702 30. 269 | .002 .004 .006 .008 .015 |
| | 30 321/2 333/4 35 371/2 | 2, 852 . 851 . 851 . 850 . 850 | 3. 565 . 564 . 563 . 563 . 562 | 7. 130 . 128 . 127 . 126 . 124 | 10. 695 . 692 . 690 . 689 . 686 | 14. 260 . 256 . 254 . 252 . 248 | 21. 390 . 384 . 381 . 378 . 372 | | 11/4 21/4 33/4 | 45. 403 | 0.000 .001 .002 |
| | 40 411/4 421/2 45 471/4 483/4 | 2. 849 . 848 . 848 . 847 . 847 . 846 | 3. 561 . 561 . 560 . 559 . 558 . 558 | 7. 122 . 121 . 120 . 118 . 116 . 115 | 10. 683 . 682 . 680 . 677 . 674° . 673 | 14. 244 . 242 . 240 . 237 . 233 . 231 | 21. 366 . 363 . 361 . 355 . 349 . 346 | For latitude 22° | 5 | 15. 136 18. 921 22. 705 30. 272 | .004 .006 .009 .015 .024 .035 |
| | 50 52½ 55 56¼ 57½ | 2, 846 . 845 . 844 . 844 | 3. 557 . 556 . 555 . 555 . 554 | 7. 114 . 112 . 110 . 110 . 108 | 10. 672 . 669 . 666 . 664 . 663 | 14. 229 . 225 . 221 . 219 . 217 | 21. 343 . 337 . 331 . 328 . 325 | | | | |
| 21 | 02½ 03¾ 05 07⅓ | . 841 . 840 2. 839 | 3. 553 . 552 . 552 . 551 . 550 3. 549 | 7. 106 . 004 . 104 . 103 . 101 7. 099 | 10. 660 . 657 . 655 . 654 . 651 | 14. 213 . 209 . 207 . 205 . 201 14. 197 | 21. 319 . 313 . 311 . 308 . 302 21. 296 | | | | |
| | 111/4 121/4 15 171/4 183/4 | . 839 . 838 . 837 . 837 | . 549 . 548 . 547 . 546 . 546 | . 098 . 097 . 095 . 093 . 092 | . 646 . 645 . 642 . 639 . 637 | . 195 . 193 . 189 , 185 . 183 | . 294 . 290 . 284 . 278 . 275 21, 272 | | | | |
| | 20 22½ 25 26½ 27½ | . 835 . 834 . 834 | 3. 545 . 544 . 543 . 543 . 542 | 7. 091 . 089 . 087 . 086 . 085 | 10. 636 . 633 . 630 . 628 . 627 | 14. 181 .177 .173 .171 .169 | . 268 . 260 . 257 . 254 21. 248 | | | | |
| | 30 321 333 35 371 40 | 832 | 3. 541 . 540 . 540 . 539 . 538 3. 537 | | 10. 624 . 621 . 619 . 618 . 615 | . 161 . 159 . 157 . 153 | 21. 246 . 242 . 239 . 235 . 229 21. 223 | | | | |
| | 413, 423, 45, 473, 483, | . 829 . 829 . 828 . 827 | . 537 . 536 . 535 . 534 | . 073 . 072 . 070 . 068 . 067 | .610 .609 .606 .602 .601 | . 147 . 145 . 141 . 137 . 135 | . 220 217 . 211 . 205 . 202 | | | | |
| 2 | 50 523 55 563 573 2 00 | .825 .825 | . 532 . 531 . 531 . 530 | . 064 . 062 . 061 . 060 | , 596 . 593 . 592 . 590 | .128 .124 .122 .120 | , 180 | | | | |

TABLE 4.—Coordinates for the projection of maps, scale 24800—Continued

| | | Absci | ssas of de | veloped p | arallel | | Ordinates of de meridio | velo nal | ped parall distances | el and |
|--|---|--|--|---|--|--|----------------------------|--|---|--|
| Lati- tude of parallel | | | Longitud | le interva | 1 | | Latitude and lo | nei- | Merid- | Ordi- nate |
| | 1′ | 11/4' | 23/2' | 33/4' | 5′ | 73% | tude interval | | ional distance | of de- veloped parallel |
| 22 00 0214 0344 05 0714 | Inches 2, 823 , 822 , 822 , 822 , 821 | Inches 3, 529 , 528 , 527 , 527 , 526 | Inches 7. 058 . 056 . 055 . 054 . 052 | Inches 10. 587 . 584 . 582 . 581 . 578 | Inches 14. 116 . 112 . 110 . 108 . 104 | Inches 21, 174 . 168 . 165 . 162 . 156 | For latitude 22° | 11/4 21/5 11/4 5 61/4 71/2 | 15, 136 | Inch 0.000 .001 .002 .004 .006 |
| 10 111/4 121/2 15 171/4 183/4 | 2. 820 .819 .819 .818 .817 .817 | 3. 525 . 524 . 524 . 523 . 522 . 521 | 7. 050 . 049 . 048 . 046 . 044 . 043 | 10. 575 . 573 . 572 . 568 . 565 . 564 | 14. 100 . 097 . 095 . 091 . 087 . 085 | 21, 149 . 146 . 143 . 137 . 131 . 128 | | 10 12½ 15 | 30, 272 37, 841 45, 409 | . 009 . 015 . 024 . 035 |
| 20 22½ 25 26¼ 27½ | 2. 817 . 816 . 815 . 815 . 814 | 3, 521 . 520 . 519 . 518 . 518 | 7, 041 . 039 . 037 . 036 . 035 | 10. 562 . 559 . 556 . 554 . 553 | 14. 083 . 079 . 074 . 072 . 070 | 21, 124 . 118 . 112 . 109 . 105 | · For latitude 23° | 11/4 21/2 33/4 5 61/4 71/2 | 3. 784 7. 569 11. 354 15. 138 18. 923 22. 707 30. 276 | 0.000 .001 .002 .004 .006 .009 |
| 30 32½ 33¾ 35 37½ | 2.813 .812 .812 .811 .811 | 3. 517 . 515 . 515 . 514 . 513 | 7. 033 . 031 . 030 . 029 . 027 | 10, 550 . 546 . 545 . 543 . 540 | 14. 066 . 062 . 060 . 058 . 053 | 21. 099 . 093 . 090 . 087 . 080 | | 12½ 15 15 1½ 2½ 3¾ | 37. 846 45. 415 3. 785 7. 570 | 0.000 0.000 |
| 40 41½ 42½ 45 47½ 48¾ | 2. 810 . 809 . 809 . 808 . 807 . 807 | 3. 512 . 512 . 511 . 510 . 509 . 509 | 7. 025 . 024 . 022 . 020 . 019 . 017 | 10. 537 . 535 . 534 . 530 . 527 . 526 | 14. 049 . 047 . 045 . 041 . 036 . 034 | 21. 074 . 071 . 067 . 061 . 055 . 051 | For latitude 24° | 3% 5 6% 71/2 10 121/2 15 | 11, 355 15, 140 18, 925 22, 710 30, 280 37, 851 45, 421 | . 002 . 004 . 006 . 009 . 016 . 026 |
| 50 52½ 55 56¼ 57½ | 2, 806 . 806 . 805 . 804 . 804 | 3. 508 . 507 . 506 . 505 . 505 | 7. 016 . 014 . 012 . 011 . 010 | 10. 524 . 521 . 518 . 516 . 515 | 14, 032 . 028 . 024 . 021 . 019 | 21. 048 . 042 . 035 . 032 . 029 | | ,13 | 20, 121 | . 037 |
| 23 00 02½ 03¾ 05 07½ | 2. 803 . 802 . 802 . 801 . 800 | 3, 504 . 503 . 502 . 502 . 501 | 7. 008 . 005 . 004 . 003 . 001 | 10. 511 . 508 . 506 . 505 . 502 | 14. 015 . 011 . 009 . 006 . 002 | 21. 023 . 016 . 013 . 010 . 003 | | | | |
| 10 11½ 12½ 15 17½ 18¾ | 2. 800 . 799 . 799 . 798 . 797 . 797 | 3, 499 . 499 . 498 . 497 . 496 . 496 | 6, 999 . 998 . 997 . 995 . 992 . 991 | 10. 498 . 497 . 495 . 492 . 489 . 487 | 13, 998 . 996 . 994 . 989 . 985 . 983 | 20, 997 . 994 . 990 . 984 . 977 . 974 | | | | |
| 20 22½ 25 26¼ 27½ | 2. 796 . 795 . 794 . 794 . 793 | 3. 495 . 494 . 493 . 492 . 492 | 6. 990 . 988 . 986 . 985 . 984 | 10. 485 . 482 . 479 . 477 . 475 | 13. 980 . 976 . 972 . 969 . 967 | 20. 971 . 964 . 957 . 954 . 951 | | | | |
| 30 32½ 33¾ 35 37½ | 2. 793 . 792 . 791 . 791 . 790 | 3. 491 . 490 . 489 . 489 . 487 | 6. 981 . 979 . 978 . 977 . 975 | 10. 472 . 469 . 467 . 466 . 462 | 13. 963 . 958 . 956 . 954 . 950 | 20. 944 . 938 . 934 . 931 . 925 | | | | |
| 40 411/4 423/5 45 471/6 488/4 | 2. 789 . 789 . 788 . 787 . 786 . 786 | 3. 486 . 486 . 485 . 484 . 483 . 482 | 6. 973 . 972 . 970 . 968 . 966 . 965 | 10. 459 . 457 456 . 452 . 449 . 447 | 13. 945 . 943 . 941 . 937 . 932 . 930 | 20, 918 . 915 . 911 . 905 . 898 . 895 | | | | |
| 50 52½ 55 56¼ 57½ | 2. 786 . 785 . 784 . 783 . 783 | 3. 482 . 481 . 480 . 479 . 479 | 6. 964 . 962 . 959 . 958 . 957 | 10. 446 . 442 . 439 . 437 . 436 | 13. 928, . 923 . 919 . 916 . 914 | 20. 891 . 885 . 878 . 875 . 871 | | | | |
| 4 00 | 2. 782 | 3. 477 | 6. 955 | 10. 432 | 13. 910 | 20. 865 | | | | |

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Table 4.—Coordinates for the projection of maps, scale 241000—Continued

| | | Absci | ssas of de | veloped p | arallel | | Ordinates of developed parallel and meridional distances | | | | | |
|--|---|---|---|--|---|--|--|---|--|---|--|--|
| Lati- ude of arallel | | | Longitud | e interva | l _ | | Latitude and lo | ngi- | Merid- | Ordi- nate | | |
| | 1' | 11/4' | 2½′ | 33/4' | 5′ | 71/4' | tude interval | | ional distance | of de- velope paralle | | |
| 4 00 023 033 05 073 | . 780 | Inches 3.477 .476 .476 .475 .474 | Inches 6. 955 . 953 . 952 . 950 . 948 | Inches 10, 432 429 427 426 422 | Inches 13, 910 . 905 . 903 . 901 . 896 | Inches 20, 865 . 858 . 855 . 851 . 844 | For latitude 24° | 11/4 21/2 33/4 5 61/4 71/2 | 10.140 | Inch 0, 00 .00 .00 .00 .00 | | |
| 10 111 121 15 171 183 | 2. 778 . 778 . 777 . 777 . 776 . 775 | 3. 473 . 472 . 472 . 471 . 470 . 469 | 6, 946 . 945 . 944 . 941 . 939 . 938 | 10. 419 . 417 . 415 . 412 . 409 . 407 | 13. 892 . 889 . 887 . 883 . 878 . 876 | 20. 838 . 834 . 831 . 824 . 817 . 814 | | 121/2 121/2 | 30. 280 37. 851 45. 421 | .01 | | |
| 20 22½ 25 26½ 27½ | 2, 775 | 3. 468 . 467 . 466 . 466 . 465 | 6. 937 . 935 . 932 . 931 | 10. 405 . 402 . 398 . 397 . 395 | 13. 874 . 869 . 864 . 862 . 860 | 20. 811 . 804 . 797 . 793 . 790 | For latitude 25° | 11/4 21/2 33/4 5 61/4 71/2 10 | 15, 142 18, 928 22, 713 30, 284 | 0.00 .00 .00 .00 .00 | | |
| 30 32½ 33¾ 35 37½ | . 769 | 3. 464 . 463 . 462 . 462 . 460 | 6. 928 . 925 . 924 . 923 . 921 | 10. 392 . 388 . 386 . 385 . 381 | 13. 855 . 851 . 849 . 846 . 842 | 20. 783 . 776 . 773 . 769 . 763 | 1.6% | 1123/5 115 115 11/4 21/2 33/4 | 45. 428 | 0.00 | | |
| 40 411, 421, 45 471, 483, | 1 .766 | 3, 459 . 459 . 458 . 457 . 456 . 455 | 6. 919 . 917 . 916 . 914 . 912 . 911 | 10. 378 . 376 . 374 . 371 . 367 | 13, 837 . 835 . 833 . 828 . 823 . 821 | 20. 756 . 752 . 749 . 742 . 735 . 732 | For latitude 26° | 33/4 5 61/4 71/2 10 121/2 15 | 15, 144 18, 931 22, 717 30, 289 | .00 .00 .00 .01 .01 .02 | | |
| 50 52} 55 56} 57} | . 762 | 3. 455 . 454 . 452 . 452 . 451 | 6. 909 . 907 . 905 . 904 . 902 | 10. 364 . 361 . 357 . 355 . 354 | 13. 819 . 814 . 809 . 807 . 805 | 20. 728 . 721 . 714 . 711 . 707 | | | | | | |
| 00 023 033 05 071 | 2. 760 . 759 . 759 . 758 | 3. 450 . 449 . 448 . 448 . 447 | 6. 900 . 898 . 897 . 895 . 893 | 10. 350 . 347 . 345 . 343 . 340 | 13. 800 . 796 . 793 . 791 . 786 | 20. 700 . 693 . 690 . 686 . 679 | | | | | | |
| 10 111, 121, 15 171, 183, | 2. 756 . 758 . 755 . 754 . 753 . 753 | 3. 445 . 445 . 444 . 443 . 442 . 441 | 6. 891 . 890 . 888 . 886 . 884 . 882 | 10. 336 . 334 . 333 . 329 . 325 . 324 | .13. 781 .779 .777 .772 .767 | 20. 672 . 669 . 665 . 658 . 651 . 647 | | | | | | |
| 20 221 25 261 271 | 2. 753 . 752 . 751 | 3. 441 . 439 . 438 . 438 . 437 | 6. 881 . 879 . 877 . 875 . 874 | 10. 322 . 318 . 315 . 313 . 311 | 13. 763 . 758 . 753 . 751 . 748 | 20. 644 . 637 . 630 . 626 . 623 | | | | | | |
| 30 323 333 35 373 | . 747 | 3.436 .435 .434 .434 .432 | 6. 872 . 870 . 868 . 867 . 865 | 10. 308 . 304 . 302 . 301 . 297 | 13. 744 . 739 . 737 734 . 729 | 20. 616 . 609 . 605 . 601 . 594 | | | | | | |
| 40 41½ 42½ 45 47½ 48¾ | .743 | 3. 431 . 431 . 430 . 429 . 428 . 427 | 6. 862 . 861 . 860 . 858 . 855 . 854 | 10. 294 . 292 . 290 . 286 . 283 . 281 | 13. 725 . 722 . 720 . 715 . 710 . 708 | 20. 587 . 583 . 580 . 573 . 565 . 562 | | | | | | |
| 50 521 55 563 573 | 2. 741 . 740 . 739 | 3. 426 . 425 . 424 . 423 . 423 | 6, 853 . 850 . 848 . 847 . 846 | 10. 279 . 276 . 272 . 270 . 268 | 13. 706 . 701 . 696 . 694 . 691 | 20. 558 . 551 . 544 . 540 . 537 | | | | | | |
| 6 00 | 2. 737 | 3. 422 | 6. 843 | 10. 265 | 13. 686 | 20. 530 | | | | | | |

TABLE 4.—Coordinates for the projection of maps, scale 23000—Continued

| - | | 1 | | | joi the | projecti | on of me | ips, scale 24000 | Continu | ied |
|----|--|---|---|--|---|--|---|---------------------------------|--|---|
| | | | Absc | issas of d | eveloped | parallel | | Ordinates of dev meridion | reloped paral al distances | lel and |
| £1 | Lati- ude of trallel | | - | Longitu | de interv | al | ., | , . | Merid- | Ordi- |
| _ | | 1' | 11/4' | 2½′ | 33/4' | 5' | 71/3' | Latitude and lon tude intervals | gi- ional dis- | nate of de- veloped parallel |
| 26 | 00 02½ 03¾ 05 07½ | . 736 | Inches 3. 422 . 420 . 420 . 419 . 418 | Inches 6. 843 . 841 . 840 . 838 . 836 | Inches 10. 265 . 261 . 259 . 258 . 256 | . 682 | Inches 20, 530 , 522 , 519 , 515 , 508 | For latitude 26° | / Inches 114 3.786 212 7.572 314 11.358 5 15.144 614 18.931 | Inch 0.000 .001 .002 .004 .007 |
| | 10 111/4 121/2 15 171/2 183/4 | 731 | 3.417 .416 .416 .414 .413 .412 | 6. 833 . 832 . 831 . 829 . 826 . 825 | 10. 250 . 248 . 247 . 243 . 239 . 237 | 13. 667 . 665 . 662 . 657 . 652 . 650 | 20. 500 . 497 . 493 . 486 . 478 | . (1 | | .010 .017 .027 .039 |
| | 20 22½ 25 26¼ 27½ | 2. 729 . 728 . 727 . 727 . 727 | 3. 412 . 411 . 409 . 409 . 408 | 6.824 .821 .819 .818 .816 | 10. 236 . 232 . 228 . 226 . 225 | 13. 647 . 643 . 638 . 635 . 633 | . 475 20. 471 . 464 . 456 . 453 . 449 | | 1½ 3. 787 2½ 7. 573 3¾ 11. 360 5 15. 146 6¼ 18. 933 7½ 22. 720 0 30. 293 | 0.000 .001 .003 .004 .007 .010 |
| | 30 32½ 33¾ 35 37½ | 2. 726 . 725 . 724 . 724 . 723 | 3. 407 . 406 . 405 . 404 . 403 | 6.814 .811 .810 .809 .807 | 10. 221 . 217 . 215 . 213 . 210 | 13. 628 . 623 . 620 . 618 . 613 | 20, 442 , 434 , 431 , 427 , 420 | (13 | 2½ 37. 867 5 45. 439 | . 028 |
| | 40 411/4 421/2 45 471/2 483/4 | 2. 722 . 721 . 721 . 720 . 719 . 718 | 3. 402 . 401 . 401 . 400 . 398 . 398 | 6. 804 . 803 . 802 . 799 . 797 . 795 | 10. 206 . 204 . 202 . 199 . 195 . 193 | 13. 608 . 606 . 603 . 598 . 593 . 591 | 20. 412 . 408 . 405 . 397 . 390 . 386 | For latitude 28° | 11/4 3. 787 21/4 7. 574 33/4 11. 362 15. 148 51/4 18. 936 71/4 22. 723 30. 297 | 0.000 .001 .003 .005 .007 .010 |
| | 50 52½ 55 56¼ 57½ | 2. 718 . 717 . 716 . 715 . 715 | 3. 397 . 396 . 395 . 394 . 393 | 6. 794 . 792 . 789 . 788 . 787 | 10. 191 . 188 . 184 . 182 . 180 | 13. 588 . 583 . 578 . 576 . 573 | 20. 383 . 375 . 368 . 364 . 360 | [12 | 37. 872 45. 446 | . 029 |
| 27 | 00 02½ 03¼ 05 07½ | 2. 714 . 713 . 712 . 712 . 711 | 3. 392 . 391 . 390 . 390 . 388 | 6. 784 . 782 . 780 . 779 . 777 | 10. 176 . 173 . 171 . 169 . 165 | 13. 568 . 563 . 561 . 558 . 553 | 20. 353 . 345 . 341 . 338 . 330 | | | |
| | 10 11 ¹ / ₄ 12 ¹ / ₂ 15 17 ¹ / ₂ 18 ⁸ / ₄ | 2. 710 . 709 . 709 . 708 . 707 . 706 | 3. 387 . 386 . 386 . 384 . 383 . 383 | 6. 774 . 773 . 772 . 769 . 767 . 765 | 10.161 .159 .157 .154 .150 .148 | 13. 548 . 546 . 543 . 538 . 533 . 531 | 20. 323 . 319 . 315 . 307 . 300 . 296 | | | |
| | 20 22½ 25 26¼ 27½ | 2. 706 . 705 . 704 . 703 . 703 | 3. 382 . 381 . 380 . 379 . 378 | 6. 764 . 762 . 759 . 758 . 756 | 10. 146 . 142 . 139 . 137 . 135 | 13. 528 . 523 . 518 . 516 . 513 | 20. 292 . 285 . 277 273 . 269 | | | |
| | 30 32½ 33¾ 35 37½ | 2. 702 . 701 . 700 . 700 . 699 | 3. 377 . 376 . 375 . 374 . 373 | 6. 754 . 751 . 750 . 749 . 746 | 10. 131 . 127 . 125 . 123 . 119 | 13. 508 . 503 . 500 . 498 . 493 | 20. 262 . 254 . 250 . 247 . 239 | | | |
| | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | 2. 697 . 697 . 696 . 696 . 694 . 694 | 3. 372 . 371 . 371 . 369 . 368 . 367 | 6. 744 . 742 . 741 . 739 . 736 . 735 | 10. 116 . 114 . 112 . 108 . 104 . 102 | 13. 488 . 485 . 482 . 477 . 472 . 470 | 20. 231 . 227 . 224 . 216 . 208 . 204 | | | |
| | 50 52½ 55 56¾ 57½ | 2. 693 . 692 . 691 . 691 . 690 | 3. 367 . 365 . 364 . 364 . 363 | 6. 734 . 731 . 728 . 727 . 726 | 10. 100 . 096 . 093 . 091 . 089 | 13. 467 . 462 . 457 . 454 . 452 | 20. 201 . 193 . 185 . 181 . 177 | | | |
| 28 | 00 | 2. 689 | 3. 362 | 6. 723 | 10. 085 | 13. 446 | 20. 170 | | | |

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Table 4.—Coordinates for the projection of maps, scale 24600 —Continued

| | | A bsci | ssas of de | veloped p | parallel | | Ordinates of de meridio | velor onal | ed parali listances | lel and |
|--|---|---|---|---|--|--|----------------------------|---|---|---|
| Lati- tude of parallel | | | Longitud | le interva | 1 | | Latitude and lo | ngi- | Merid- | Ordi- nate |
| | 1' | 11/4" | 2½′ | 384' | 5' | 7½' | tude interval | S | dis- tance | of de- veloped paralle |
| 28 00 02½ 03¾ 05 07½ | Inches 2. 689 . 688 . 688 . 687 . 686 | Inches 3. 362 360 360 359 . 358 | Inches 6, 723 . 721 . 719 . 718 . 715 | Inches 10. 085 . 081 . 079 . 077 . 073 | Inches 13. 446 . 441 . 439 . 436 . 431 | Inches 20. 170 . 162 . 158 . 154 . 146 | For latitude 28° | $ \begin{bmatrix} 1\frac{1}{4} \\ 2\frac{1}{2} \\ 3\frac{3}{4} \\ 5 \\ 6\frac{1}{4} \\ 7\frac{1}{2} \end{bmatrix} $ | Inches 3. 787 7. 574 11. 362 15. 148 18. 936 | Inch 0, 00 .00 .00 .00 |
| 10 11 ¹ / ₄ 12 ¹ / ₂ 15 17 ¹ / ₂ 18 ³ / ₄ | 2. 685 . 685 . 684 . 683 . 682 . 681 | 3. 356 . 356 . 355 . 354 . 353 . 352 | 6. 713 . 711 . 710 . 708 . 705 . 704 | 10.069 .067 .065 .061 .057 | 13. 426 . 423 . 420 . 415 . 410 . 407 | 20. 138 . 134 . 131 . 123 . 115 . 111 | | 10 12½ 15 | 22. 723 30. 297 37. 872 45. 446 | . 01: . 01: . 02: . 04: |
| 20 22½ 25 26¼ 27½ | 2. 681 . 680 . 679 . 678 . 678 | 3. 351 . 350 . 349 . 348 . 347 | 6. 702 . 700 . 697 . 696 . 694 | 10. 054 . 050 . 048 . 044 . 042 | 13. 405 . 399 . 394 . 392 . 389 | 20. 107 . 099 . 091 . 086 . 083 | For latitude 29° | 11/4 21/2 38/4 5 61/4 71/2 0 | 7. 575 11. 363 15. 151 18. 939 22. 726 30. 302 | .00 .00 .00 .00 .01 |
| 30 32½ 33¾ 85 37½ | 2. 677 . 676 . 675 . 675 . 674 | 3. 346 . 345 . 344 . 343 . 342 | 6. 692 . 689 . 688 . 687 . 684 | 10. 038 . 034 . 032 . 030 . 026 | 13. 384 . 378 . 376 . 373 . 368 | 20. 076 . 068 . 064 . 060 . 052 | | 12½ 15 1½ 2½ 3¾ | 37. 878 45. 453 3. 788 7. 577 | 0.000 |
| 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | 2. 673 . 672 . 671 . 670 . 669 | 3. 341 . 340 . 339 . 338 . 337 . 336 | 6. 681 . 680 . 679 . 676 . 673 . 672 | 10. 022 . 020 . 018 . 014 . 010 . 008 | 13. 363 . 360 . 357 . 352 . 347 . 344 | 20. 044 . 040 . 036 . 028 . 020 . 016 | For latitude 30° | 0 | 11. 365 15. 153 18. 942 22. 730 30. 306 37. 884 45. 460 | . 003 . 003 . 001 . 011 . 015 |
| 50 52½ 55 56¼ 57½ | 2. 668 . 667 . 666 . 666 . 665 | 3. 335 . 334 . 333 . 332 . 331 | 6. 671 . 668 . 665 . 664 . 663 | 10, 006 . 002 9, 998 . 996 . 994 | 13. 342 . 336 . 331 . 328 . 326 | 20. 012 . 004 19. 996 . 992 . 988 | | | | .02 |
| 29 00 02½ 03¾ 05 07½ | 2. 664 . 663 . 662 . 662 . 661 | 3. 330 . 329 . 328 . 327 . 326 | 6. 660 . 657 . 656 . 655 . 652 | 9. 990 . 986 . 984 . 982 . 978 | 13. 320 .315 .312 .309 .304 | 19. 980 . 972 . 968 . 964 . 956 | | | | |
| $ \begin{array}{c} 10 \\ 11\frac{1}{4} \\ 12\frac{1}{2} \\ 15 \\ 17\frac{1}{2} \\ 18\frac{3}{4} \end{array} $ | 2. 660 . 659 . 659 . 658 . 657 . 656 | 3. 325 . 324 . 323 . 322 . 321 . 320 | 6. 649 . 648 . 647 . 644 * . 641 . 640 | 9. 974 . 972 . 970 . 966 . 962 . 960 | 13. 299 . 296 . 293 . 288 . 283 . 280 | 19. 948 . 944 . 940 . 932 . 924 . 920 | | | | |
| 20 22½ 25 26¼ 27½ | 2. 655 . 654 . 653 . 653 . 652 | 3. 319 .318 .317 .316 .315 | 6. 639 . 636 . 633 . 632 . 630 | 9. 958 . 954 . 950 . 948 . 946 | 13. 277 . 272 . 266 . 264 . 261 | 19. 916 . 908 . 900 . 896 . 891 | | | | |
| 30 32½ 33¾ 35 37½ | 2. 651 . 650 . 649 . 649 . 648 | 3. 314 . 313 . 312 . 311 . 310 | 6. 628 . 625 . 624 . 622 . 620 | 9. 942 . 938 . 936 . 933 . 929 | 13. 256 . 250 . 247 . 245 . 239 | 19. 883, . 875 . 871 . 867 . 859 | | | | |
| 40 41¼ 42½ 45 47½ 48¾ | 2. 647 . 646 . 646 . 644 . 643 . 643 | 3. 308 . 308 . 307 . 306 . 304 . 304 | 6. 617 . 616 . 614 . 611 . 609 . 607 | 9. 925 . 923 . 921 . 917 . 913 . 911 | 13. 234 . 231 . 228 . 223 . 217 . 215 | 19. 851 . 847 . 842 . 834 . 826 . 822 | | | | |
| 50 52½ 55 56¼ 57½ | 2. 642 . 641 . 640 . 640 . 639 | 3. 303 . 302 . 300 . 300 . 299 | 6. 606 . 603 . 600 . 599 . 598 | 9. 909 . 905 . 901 . 899 . 897 | 13. 212 . 206 . 201 . 198 . 195 | 19. 818 . 810 . 801 . 797 . 793 | | | | |

Table 4.—Coordinates for the projection of maps, scale 24000 Continued

| | | | Absci | ssas of de | veloped p | arallel | | Ordinates of de meridio | evelo nal d | ped paral | lel and |
|---|--|---|---|--|--|---|---|----------------------------------|--|--|--|
| . La | e of | | | Longitue | de interv | al | ′ | | | | Ordi- |
| para | ulei | 1' | 11/4" | 21/4' | 334' | 5' | 734' | Latitude and lo tude interval | ngi- s | Merid- ional distance | nate of de veloped parallel |
| 0 | 00 02½ 03¾ 05 07½ | Inches 2. 638 . 637 . 636 . 636 . 635 | Inches 3, 297 296 295 295 293 | Inches 6. 595 . 592 . 591 . 589 . 587 | Inches 9, 892 . 888 . 886 . 884 . 880 | Inches 13, 190 . 184 . 182 . 179 . 173 | Inches 19. 785 . 777 . 772 . 768 . 760 | For latitude 30° | 11/4 21/2 33/4 5 61/4 71/2 | 15, 153 | Inch 9, 090 .001 .003 .005 .007 |
|] | 10 11½ 12½ 15 17½ 18¾ | 2. 633 . 633 . 632 . 631 . 630 . 630 | 3. 292 . 291 . 291 . 289 . 288 . 287 | 6. 584 . 583 . 581 . 578 . 576 | 9. 876 . 874 . 872 . 867 . 863 | 13, 168 . 165 . 162 . 157 . 151 | 19. 752 . 748 . 743 . 735 . 727 | | 10 12½ 15 | 30. 306 | . 011 . 019 . 030 . 043 |
| | 20 22½ 25 26¼ 27½ | 2, 629 . 628 . 627 . 626 . 626 | 3. 286 . 285 . 284 . 283 . 282 | 574 6. 573 . 570 . 567 . 566 . 564 | .861 9.859 .855 .851 .849 .847 | .148 13.146 .140 .135 .132 .129 | . 723 19. 719 . 710 . 702 . 698 . 693 | For latitude 31° | 134 21/2 334 5 61/4 71/2 10 | 15. 155 18. 945 22. 733 30. 311 | 0,000 .001 .008 .006 .008 .011 |
| 2000 | 30 32½ 33¾ 35 37½ | 2. 625 . 623 . 623 . 622 . 621 | 3. 281 . 279 . 278 . 278 . 277 | 6, 562 , 559 , 557 , 556 , 553 | 9, 843 . 838 . 836 . 834 . 830 | 13. 123 . 118 . 115 . 112 . 106 | 19. 685 . 677 . 672 . 668 . 660 | | 121/2 | 37. 890 45. 467 3. 789 | . 031 . 044 |
| 4 | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | 2, 620 . 620 . 619 . 618 . 617 . 616 | 3. 275 . 275 . 274 . 272 . 271 . 270 | 6. 550 . 549 . 548 . 545 . 542 . 541 | 9. 826 . 824 . 821 . 817 . 813 . 811 | 13. 101 . 098 . 095 . 090 . 084 . 081 | 19. 651 . 647 . 643 . 634 . 626 . 622 | For latitude 32° | 11/4 21/2 33/4 5 61/4 71/2 10 121/2 15 | 7. 579 11. 369 15. 158 18. 948 22. 737 30. 316 37. 896 45. 474 | . 001 . 003 . 005 . 008 . 011 . 020 . 031 . 045 |
| 8 | 50 52½ 55 56¼ 57½ | 2, 616 . 615 . 613 . 613 . 612 | 3, 270 . 268 . 267 . 266 . 265 | 6. 539 . 536 . 534 . 532 . 531 | 9, 809 . 805 . 800 . 798 . 796 | 13. 078 . 073 . 067 . 064 . 061 | 19. 618 . 609 . 601 . 596 . 592 | | | 20. 212 | .040 |
| | 00 02½ 03¾ 05 07½ | 2, 611 .610 .609 .609 .608 | 3. 264 . 263 . 262 . 261 . 260 | 6, 528 . 525 . 524 . 522 . 519 | 9. 792 . 786 . 785 . 783 . 779 | 13. 056 . 050 . 047 . 044 . 039 | 19. 584 . 575 . 571 . 566 . 558 | | | | |
| 1 | 10 11½ 12½ 15 17½ 18¾ | 2, 607 . 606 . 605 . 604 . 603 . 603 | 3. 258 . 258 . 257 . 255 . 254 . 253 | 6. 516 . 515 . 514 . 511 . 508 . 506 | 9. 775 . 773 . 770 . 766 . 762 . 760 | 13, 033 . 030 . 027 . 021 . 016 . 013 | 19. 549 . 545 . 541 . 532 . 524 . 519 | | | | |
| 2 | 20 22½ 25 26¼ 27½ | 2, 602 . 601 . 600 . 599 . 599 | 3. 253 . 251 . 250 . 249 . 248 | 6. 505 . 502 . 499 . 498 . 496 | 9. 757 . 753 . 749 . 747 . 745 | 13, 010 . 004 12, 999 . 996 . 993 | 19. 515 . 506 . 498 . 493 . 489 | | | | |
| 3333 | 30 32½ 33¾ 35 37½ | 2, 597 . 596 . 596 . 595 . 594 | 3, 247 . 245 . 245 . 244 . 242 | 6. 494 . 491 . 489 . 488 . 485 | 9. 740 . 736 . 734 . 732 . 727 | 12, 987 . 981 . 978 . 976 . 970 | 19. 481 . 472 . 468 . 463 . 455 | | | | |
| 4 | 10 11½ 12½ 15 17½ | 2, 593 . 592 . 592 . 591 . 589 . 589 | 3. 241 . 240 . 240 . 238 . 237 . 236 | 6, 482 . 481 . 479 . 476 . 473 . 472 | 9. 723 . 721 . 719 . 714 . 710 . 708 | 12, 964 . 961 . 958 . 952 . 947 . 944 | 19. 446 . 442 . 437 . 429 . 420 . 416 | | | | |
| 5 5 5 5 | 50 52½ 55 56¼ 57½ | 2, 588 , 587 , 586 , 585 , 585 | 3, 235 . 234 . 232 . 232 . 231 | 6. 470 . 467 . 465 . 463 . 462 | 9. 706 . 701 . 697 . 695 . 693 | 12. 941 . 935 . 929 . 926 . 923 | 19. 411 . 402 . 394 . 389 . 385 | | | | |
| 32 0 | 0 | 2, 583 | 3, 229 | 6. 459 | 9. 688 | 12.917 | 19. 37.6 | | | | |

110 Tables for construction of polyconic projections

Table 4.—Coordinates for the projection of maps, scale 228 000—Continued

| | | | Absci | ssas of de | veloped p | arallel | , | Ordinates of de meridic | veloj nal (| ped parall listances | el and |
|-----|--|---|--|--|--|---|--|----------------------------|--|---|-------------------------------|
| tuc | ati- de of allel | | | Longitud | e interval | | , | T-44-331 | | Merid- | Ordinate |
| | | 1′ | 11/4' | 21/2' | 3¾′ | 5′ | 71/2' | Latitude and lo | | ional distance | of de velop paral |
| 2 | 00 02½ 03¾ 05 07½ | Inches 2, 583 , 582 , 582 , 581 , 580 | Inches 3, 229 , 228 , 227 , 226 , 225 | Inches 6. 459 . 456 . 454 . 453 . 450 | Inches 9. 688 . 684 . 681 . 679 . 675 | Inches 12. 917 . 912 . 909 . 906 . 900 | Inches 19. 376 . 367 . 363 . 359 . 351 | For latitude 32° | 11/4 21/2 38/4 5 61/4 71/2 | Inches 3, 789 7, 579 11, 369 15, 158 18, 948 22, 737 | Inch 0. (0 . (0 . (0 |
| | 10 11½ 12½ 15 17½ 18¾ | 2. 579 . 578 . 578 . 576 . 575 . 575 | 3. 224 . 223 . 222 . 221 . 219 . 218 | 6. 447 . 445 . 444 . 441 . 438 . 437 | 9. 671 . 668 . 666 . 662 . 657 . 655 | 12. 894 . 891 . 888 . 882 . 876 . 873 | 19. 341 . 337 . 332 . 323 . 315 . 310 | | 10 12½ 15 | 30. 316 37. 896 45. 474 | 0 |
| | 20 22½ 25 26¼ 27½ | 2. 574 . 573 . 572 . 571 . 571 | 3. 218 . 216 . 215 . 214 . 213 | 6. 435 . 432 . 429 . 428 . 426 | 9. 653 . 649 . 644 . 642 . 640 | 12. 871 . 865 . 859 . 856 . 853 | 19. 306 . 297 . 288 . 284 . 279 | For latitude 33% | 11/4 21/2 38/4 5 61/4 71/2 10 | 3. 790 7. 580 11. 370 15. 160 18. 951 22. 741 30. 321 | 0.0 |
| | 30 32½ 33¾ 35 37½ | 2. 569 . 568 . 568 . 567 . 566 | 3. 212 . 210 . 209 . 209 . 207 | 6. 423 . 420 . 419 . 417 . 415 | 9. 635 . 631 . 628 . 626 . 622 | 12. 847 . 841 . 838 . 835 . 829 | 19. 270 . 261 . 257 . 252 . 244 | | 12½ 15 | 37. 902 45. 481 3. 791 7. 581 | 0.0 |
| | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | 2. 565 . 564 . 562 . 562 . 561 . 560 | 3, 206 , 205, , 204 , 203 , 201 , 201 | 6, 412 . 410 . 409 . 406 . 403 . 401 | 9. 617 . 615 . 613 . 608 . 604 . 602 | 12. 823 . 820 . 817 . 811 . 805 . 802 | 19. 235 . 230 . 226 . 217 . 208 . 203 | For latitude 34° | 21/2 33/4 5 61/4 71/2 10 121/2 15 | 11. 372 15. 162 18. 954 22. 744 30. 326 37. 908 45. 489 | |
| | 50 52½ 55 56¼ 57½ | 2. 560 . 559 . 557 . 557 . 556 | 3. 200 . 198 . 197 . 196 . 195 | 6. 400 . 397 . 394 . 392 . 391 | 9. 599 . 595 . 590 . 588 . 586 | 12. 799 . 793 . 787 . 784 . 781 | 19. 199 . 190 . 181 . 176 . 172 | | | | |
| | 00 02½ 03¾ 05 07½ | 2. 555 . 554 . 553 . 553 . 551 | 3. 194 . 192 . 192 . 191 . 189 | 6. 388 . 385 . 383 . 382 . 379 | 9. 581 . 577 . 575 . 572 . 568 | 12. 775 . 769 . 766 . 763 . 757 | 19. 163 . 154 . 149 . 145 . 136 | | | | |
| | 10 11 ¹ / ₄ 12 ¹ / ₂ 15 17 ¹ / ₂ 18 ³ / ₄ | 2. 550 . 550 . 549 . 548 . 547 . 546 | 3. 188 . 187 . 186 . 185 . 183 . 183 | 6. 376 . 374 . 373 . 370 . 367 . 365 | 9. 563 . 561 . 559 . 554 . 550 . 548 | 12. 751 . 748 . 745 . 739 . 733 . 730 | 19. 127 . 122 . 118 . 109 . 100 . 095 | | | | |
| | 20 22½ 25 26¼ 27½ | 2. 545 . 544 . 543 . 542 . 542 | 3. 182 . 180 . 179 . 178 . 177 | 6. 364 . 360 . 357 . 356 . 354 | 9. 545 . 541 . 536 . 534 . 532 | 12. 727 . 721 . 715 . 712 . 709 | 19. 091 . 081 . 072 . 068 . 063 | | | | |
| | 30 32½ 33¾ 35 37½ | 2. 540 . 539 . 539 . 538 . 537 | 3. 176 . 174 . 173 . 173 . 171 | 6. 351 . 348 . 347 . 345 . 342 | 9. 527 . 523 . 520 . 518 . 513 | 12, 703 . 697 . 694 . 691 . 684 | 19. 054 . 045 . 040 . 036 . 027 | | | | |
| | 40 41½ 42½ 45 47½ 48¾ | 2. 536 . 535 . 535 . 533 . 532 . 531 | 3. 170 . 169 . 168 . 167 . 165 . 164 | 6. 339 . 338 . 336 . 333 . 330 . 328 | 9. 509 . 506 . 504 . 500 . 495 . 493 | 12. 678 . 675 . 672 . 666 . 660 . 657 | 19, 017 . 013 . 008 18, 999 . 990 . 985 | | | | |
| | 50 52½ 55 56¼ 57½ | 2. 531 . 530 . 528 . 528 . 527 | 3. 163 . 162 . 160 . 160 . 159 | 6. 327 . 324 . 321 . 319 . 318 | 9. 490 . 486 . 481 . 479 . 477 | 12. 654 . 648 . 642 . 638 . 635 | 18. 981 . 972 . 962 . 958 . 953 | | | | |
| | 00 | 2. 526 | 3. 157 | 6, 315 | 9. 472 | 12. 629 | 18. 944 | | | | |

Table 4.—Coordinates for the projection of maps, scale 24000—Continued

| | | | Absc | issas of de | veloped | parallel | | Ordinates of de meridi | evelo; onal | ped parali iistances | lel and |
|----|--|--|--|---|--|--|--|------------------------|--|---|---|
| tu | Lati- ide of rallel | | , | Longitud | le interva | 1 | | Latitude and longi- | | Merid- | Ordi- nate |
| | | 1' | 11/2" | 21/2′ | 33/4' | 5' | 73%' | tude interval | S TRI- | ional distance | of de- veloped parallel |
| 34 | 00 021/6 033/4 05 071/2 | Inches 2, 526 , 525 , 524 , 523 , 522 | Inches 8. 157 . 156 . 155 . 154 . 163 | Inches 6. 315 . 312 . 310 . 308 . 305 | Inches 9. 472 . 467 . 465 . 463 . 458 | Inches 12. 629 . 623 . 620 . 617 . 611 | Inches 18. 944 . 935 . 930 . 925 . 916 | For latitude 34° | | Inches 3. 791 7. 581 11. 372 15. 162 18. 954 | Inch 0.000 .001 .003 .005 .008 |
| | 10 111/4 121/2 15 171/2 183/4 | 2. 521 . 520 . 520 . 519 . 517 . 517 | 3. 151 . 150 . 150 . 148 . 146 | 6. 302 . 301 . 299 . 296 . 293 . 291 | 9. 453 . 451 . 449 . 444 . 439 . 437 | 12, 605 . 601 . 598 . 592 . 586 . 583 | 18. 907 . 902 . 898 . 888 . 879 . 874 | | 7½ 10 12½ 15 | 22, 744 30, 326 37, 908 45, 489 | . 011 . 021 . 032 . 046 |
| | 20 22½ 25 26¼ 27½ | 2. 516 . 515 . 513 . 513 . 512 | 3. 145 . 143 . 142 . 141 . 140 | 6. 290 . 287 . 284 . 282 . 281 | 9. 435 . 430 . 425 . 423 . 421 | 12. 580 . 574 . 567 . 564 . 561 | 18. 870 . 860 . 851 . 846 . 842 | For latitude 35° | 11/4 21/2 33/4 5 61/4 71/2 | 3. 791 7. 583 11. 374 15. 165 18. 957 22. 748 30. 331 | 0,000 .001 .003 .005 .008 .012 |
| | 30 32½ 33¾ 35 37½ | 2.511 .510 .509 .508 .507 | 3. 139 . 137 . 136 . 136 . 134 | 6. 277 . 274 . 273 . 271 . 268 | 9. 416 - 411 - 409 - 407 - 402 | 12. 555 . 549 . 545 . 542 . 536 | 18. 832 . 823 . 818 . 814 . 804 | | 12½ | 37. 914 45. 496 3. 792 | . 033 . 047 |
| | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | 2. 506 . 505 . 505 . 503 . 502 . 502 | 3. 132 . 132 . 131 . 129 . 128 . 127 | 6. 265 . 263 . 262 . 259 . 255 . 254 | 9. 397 . 395 . 393 . 388 . 383 . 381 | 12. 530 . 527 . 523 . 517 . 511 . 508 | 18. 795 . 790 . 785 . 776 . 766 . 762 | For latitude 36° | 2½ 3¾ 5 6¼ 7½ 10 12½ 15 | 7. 584 11. 376 15. 168 18. 960 22. 752 30. 336 37. 921 45. 504 | . 001 . 003 . 005 . 008 . 012 . 021 . 033 |
| | 50 52½ 55 56¼ 57½ | 2. 501 . 500 . 498 . 498 . 497 | 3. 126 . 125 . 123 . 122 . 121 | 6. 252 . 249 . 246 . 244 . 243 | 9. 378 . 374 . 369 . 367 . 364 | 12. 505 498 . 492 . 489 . 486 | 18. 757 . 747 . 738 . 733 . 728 | | ,13 | 40. 004 | . 047 |
| 85 | 00 02½ 03¾ 05 07½ 10 11¼ 12½ | 2. 496 . 495 . 494 . 493 . 492 2. 491 . 490 . 490 | 3. 120 . 118 . 117 . 117 . 115 3. 113 . 113 . 112 | 6. 240 . 237 . 235 . 233 . 230 6. 227 . 225 . 224 | 9. 359 . 355 . 352 . 350 . 345 9. 341 . 338 . 336 | 12. 479 .473 .470 .467 .460 12. 454 .451 .448 | 18. 719 . 710 . 705 . 700 . 691 18. 681 . 676 . 672 | | | | |
| | 15 17½ 18½ 20 22½ 25 26¼ 27½ | . 488 . 487 . 486 2. 486 . 484 . 483 . 482 . 482 | . 110 . 109 . 108 3. 107 . 106 . 104 . 103 . 102 | . 221 . 217 . 216 . 6. 214 . 211 . 208 . 206 . 205 | . 331 . 326 . 324 9. 321 317 312 . 309 . 307 | . 441 . 435 . 432 12. 428 . 422 . 416 . 413 . 409 | . 662 . 652 . 648 18. 643 . 633 . 624 . 619 | | | | |
| | 30 32½ 33¾ 35 37½ | 2. 481 . 479 . 479 . 478 . 477 | 3. 101 . 099 . 098 . 098 . 096 | 6. 202 . 198 . 197 . 195 . 192 | 9. 302 . 297 . 295 . 293 . 288 | 12. 403 . 397 . 393 . 390 . 384 | 18. 605 . 595 . 590 . 585 . 576 | | | | |
| | 40 4134 4234 45 4734 4834 | 2. 476 . 475 . 474 . 473 . 472 . 471 | 3. 094 . 093 . 093 . 091 . 089 . 089 | 6. 189 . 187 . 185 . 182 . 179 . 177 | 9. 283 . 281 . 278 . 273 . 268 . 266 | 12. 377 . 374 . 371 . 364 . 358 . 355 | 18. 566 . 561 . 556 . 547 . 537 . 532 | | | | |
| | 50 52½ 55 56½ 57½ 00 | 2. 470 . 469 . 468 . 467 . 466 2. 465 | 3. 088 . 086 . 085 . 084 . 083 | 6. 176 . 172 . 169 . 168 . 166 | 9. 264 . 259 . 254 . 252 . 249 | 12. 352 . 345 . 339 . 335 . 382 | 18. 527 . 518 . 508 . 503 . 498 | | | | |

112 TABLES FOR CONSTRUCTION OF POLYCONIC PROJECTIONS

Table 4.—Coordinates for the projection of maps, scale 24600—Continued

| - | | 1 | | | | | | 1 | - | | |
|----|--|---|--|--|--|--|--|--------------------------|---|---|--|
| | | | Abso | issas of de | veloped p | paralle! | | Ordinates of d meridi | evelo onal c | ped paral listances | lel and |
| t | Lati- ude of arailel | | į. | Longitue | de interva | al | | Latitude and lo | ngi. | Merid- | Ordi- nate |
| | | 1' | 11/4' | 21/2' | 3¾′ | 5' | 73% | tude interval | | ional distance | of de- veloped parallel |
| 36 | | . 463 | Inches 3. 081 . 080 . 079 . 078 . 077 | Inches 6. 163 . 160 . 158 . 156 . 153 | Inches 9. 244 . 239 . 237 . 234 . 230 | Inches 12. 326 .319 .316 .313 .306 | Inches 18, 488 479 474 469 459 | For latitude 36° | $ \begin{bmatrix} 1\frac{1}{4} \\ 2\frac{1}{2} \\ 3\frac{3}{4} \\ 5 \\ 6\frac{1}{4} \\ 7\frac{1}{2} \end{bmatrix} $ | Inches 3, 792 7, 584 11, 376 15, 168 18, 960 | Inch 0.000 .001 .003 .005 .008 |
| | 10 11½ 12½ 15 17½ 18¾ | 457 | 3. 075 . 074 . 073 . 072 . 070 . 069 | 6. 150 . 148 . 147 . 143 . 140 . 138 | 9. 225 . 222 . 220 . 215 . 210 . 208 | 12. 300 . 296 . 293 . 287 . 280 . 277 | 18, 450 . 445 . 440 . 430 . 420 . 415 | N., | 121/2 | 30, 336 37, 921 45, 504 | . 012 . 021 . 033 . 047 |
| | 20 22½ 25 26¼ 27½ | 2. 455 . 453 . 452 . 451 . 451 | 3, 068 . 067 . 065 . 064 . 063 | 6. 137 . 134 . 130 . 129 . 127 | 9. 205 . 200 . 195 . 193 . 190 | 12, 274 . 267 . 260 . 257 . 254 | 18. 410 . 401 . 391 . 386 . 381 | For latitude 37° | 11/4 21/2 33/4 5 61/4 71/2 10 | 15, 170 18, 964 22, 756 30, 341 | .001 .003 .005 .008 .012 .021 |
| | 30 32½ 33¾ 35 37½ | 2. 449 . 448 . 447 . 447 . 446 | 3. 062 . 060 . 059 . 059 . 057 | 6. 124 . 120 . 119 . 117 . 114 | 9. 186 . 181 . 178 . 176 | 12. 247 . 241 . 238 . 234 . 228 | - 18. 371 . 361 . 356 . 351 . 342 | | 121/2 | 37. 927 45. 512 3. 793 | 0.000 |
| | 40 4114 421/2 45 471/2 483/4 | 2. 444 . 444 . 443 . 442 . 440 . 440 | 3. 055 . 054 . 054 . 052 . 050 . 050 | 6. 111 . 109 . 107 . 104 . 101 . 099 | 9. 166 . 163 . 161 . 156 . 151 . 149 | 12. 221 . 218 . 215 . 208 . 201 . 198 | 18. 332 . 327 . 322 . 312 . 302 . 297 | For latitude 38% | 11/4 21/2 33/4 5 61/4 71/2 10 121/2 15 | 7. 587 11. 380 15. 173 18. 967 22. 760 30. 346 37. 935 45. 520 | . 001 . 003 . 005 . 008 . 012 . 021 . 034 . 048 |
| | 50 52½ 55 56¼ 57½ | 2. 439 . 438 . 436 . 436 . 435 | 3. 049 . 047 . 045 . 045 . 044 | 6, 097 . 094 . 091 . 089 . 087 | 9. 146 . 141 . 136 . 134 . 131 | 12. 195 . 188 . 181 . 178 . 175 | 18. 292 . 282 . 272 . 267 . 262 | | | 10, 020 | . 020 |
| 37 | 00 02½ 03¾ 05 07½ | 2. 434 . 432 . 432 . 431 . 430 | 3. 042 . 040 . 040 . 039 . 037 | 6, 084 . 081 . 079 . 077 . 074 | 9. 126 . 121 . 119 . 116 . 111 | 12. 168 . 162 . 158 . 155 . 148 | 18. 252 . 242 . 237 . 232 . 222 | | | | |
| | 10 11½ 12½ 15 17½ 18¾ | 2. 428 . 428 . 427 . 426 . 424 . 424 | 3. 035 . 035 . 034 . 032 . 030 . 030 | 6. 071 . 069 . 067 . 064 . 061 . 059 | 9. 106 . 104 . 101 . 096 . 091 . 089 | 12. 142 . 138 . 135 . 128 . 121 . 118 | 18, 212 . 207 . 102 . 192 . 182 177 | | | | |
| | 20 22½ 25 26¼ 37½ | 2. 423 . 422 . 420 . 420 . 419 | 3. 029 . 027 . 025 . 025 . 024 | 6. 057 . 054 . 051 . 049 . 047 | 9. 086 . 081 . 076 . 074 . 071 | 12, 115 . 108 . 101 . 098 . 095 | 18. 172 . 162 . 152 . 147 . 142 | | | | |
| | 30 32½ 33¾ 35 37½ | 2. 418 . 416 . 416 . 415 . 414 | 3. 022 . 020 . 020 . 019 . 017 | 6, 044 . 041 . 039 . 037 . 034 | 9, 066 . 061 . 059 . 056 . 051 | 12. 088 . 081 . 078 . 075 . 068 | 18, 132 . 122 . 117 . 112 . 102 | | | | |
| | 40 411/4 421/2 45 471/2 483/4 | 2. 412 . 412 . 411 . 410 . 408 . 407 | 3. 015 . 014 . 014 . 012 . 010 . 009 | 6. 031 . 029 . 027 . 024 . 020 . 019 | 9. 046 . 043 . 041 . 036 . 031 . 028 | 12, 061 . 058 . 054 . 048 . 041 . 038 | 18, 092 . 087 . 082 . 071 . 061 . 056 | | | | |
| 38 | 50 52½ 55 56¼ 57½ 00 | 2. 407 . 405 . 404 . 403 . 403 | 3. 009 . 007 . 005 . 004 . 003 3. 002 | 6. 017 . 014 . 010 . 009 . 007 6. 004 | 9. 026 . 021 . 015 . 013 . 010 | 12. 034 . 027 . 021 . 017 . 014 12. 007 | 18. 051 . 041 . 031 . 026 . 021 18. 011 | | | | • |
| | 1 | | | | | | | | | | |

TABLE 4.—Coordinates for the projection of maps, scale 24800 Continued

| il- 3 of liel , , , , , , , , , , , , , , , , , , , | 1' Inches 2 401 400 399 399 397 2 396 395 395 | 11/4' Inches 3.002 .000 2.999 .998 .997 | 23/4' Inches 6, 004 . 000 5, 998 | 8%4′ Inches | 5' Inches | 73% | Latitude and lor tude intervals | | Merid- ional | Ordi- nate of de- veloped | | |
|--|--|---|---|--|--|---|---|---|--|---|----------|----------|
| 00 121/2 133/4 16 171/2 0 11/4 21/2 5 71/2 83/4 | Inches 2. 401 . 400 . 399 . 399 . 397 2. 396 . 395 | Inches 3. 002 . 000 2. 999 . 998 . 997 | Inches 6, 004 , 000 5, 998 | Inches 9.005 | | 73% | 14400 14400 1440 | | | Veloned | | |
| 00 121/2 133/4 16 171/2 0 11/4 21/2 5 71/2 83/4 | 2. 401 . 400 . 399 . 399 . 397 2. 396 . 395 . 395 | 3. 002 . 000 2. 999 . 998 . 997 | 6.004 | 6, 004 . 000 5, 998 . 997 | 6. 004 . 000 5. 998 | 9.005 | Ymahaa | | | | CISCULCE | parallel |
| 11/4 21/2 5 71/2 83/4 | . 395 | | | . 000 8. 998 . 995 . 990 | 12. 007 . 000 11. 997 . 993 . 987 | Inches 18, 011 . 000 17, 995 . 990 . 980 | For latitude 38° | 114 21/2 33/4 5 61/4 71/2 | Inches 3, 793 7, 587 11, 380 15, 173 18, 967 22, 760 | Inch 0, 000 . 001 . 003 . 005 . 008 . 012 | | |
| | .392 | 2, 995 . 994 . 993 . 992 . 990 . 989 | 5. 990 . 988 . 986 . 983 . 980 . 978 | 8. 985 . 982 . 980 . 975 . 969 . 967 | 11. 980 . 976 . 973 . 966 . 959 | 17. 970 . 965 . 959 . 949 . 939 . 934 | | 10 12½ 15 | 30, 346 37, 935 45, 520 3, 794 | . 021 . 084 . 042 | | |
| 0 23/2 25 25 26/4 27/2 | 2, 391 . 389 . 388 . 387 . 386 | 2. 988 . 986 . 985 . 984 . 983 | 5. 976 . 973 . 969 . 968 . 966 | 8. 964 . 959 . 954 . 951 . 949 | 11. 952 . 946 . 939 . 935 . 932 | 17. 929 . 918 . 908 . 903 . 898 | For latitude 39° | 11/4 21/2 83/4 5 61/4 71/2 10 | 15, 176 18, 970 22, 764 30, 352 | .001 .003 .005 .008 .012 | | |
| 10 12½ 13¾ 15 17½ | 2. 385 . 384 . 383 . 382 . 381 | 2, 981 . 980 . 979 . 978 . 976 | 5. 963 . 959 . 957 . 956 . 952 | 8, 944 . 939 . 936 . 933 | 11. 925 . 918 . 915 . 911 . 904 | 17. 888 . 877 . 872 . 867 . 857 | | (15 | 45. 527 | 0.000 .001 | | |
| 10 11½ 12½ 15 17½ 18¾ | 2. 380 . 379 . 378 . 377 . 375 . 375 | 2. 974 . 974 . 973 . 971 . 969 . 968 | 5. 949 . 947 . 945 . 942 . 938 . 937 | 8. 923 . 921 . 918 . 913 . 908 . 905 | 11. 897 . 894 . 891 . 884 . 877 . 873 | 17. 846 . 841 . 836 . 826 . 815 . 810 | For latitude 40° | 61/4 71/2 10 121/2 | 15. 178 18. 973 22. 768 30. 357 37. 947 | .003 .005 .009 .012 .022 .034 | | |
| 50 52½ 55 56¼ 57½ | 2. 374 . 373 . 371 . 370 . 370 | 2. 967 . 966 . 964 . 963 . 962 | 5, 935 . 931 . 928 . 926 . 924 | 8. 902 . 897 . 892 . 889 . 887 | 11. 870 . 863 . 856 . 852 . 849 | 17. 805 . 794 . 784 . 779 . 774 | | | | | | |
| 10 12½ 18¾ 16 17½ | 2. 368 . 367 . 366 . 366 . 364 | 2. 961 . 959 . 958 . 957 . 955 | 5. 921 . 918 . 916 . 914 . 911 | 8. 882 .876 .874 .871 .866 | 11. 842 . 885 . 832 . 828 . 821 | 17. 763 . 753 . 748 . 742 . 732 | | | | | | |
| 10 111/4 121/2 15 171/2 188/4 | 2. 363 . 362 . 361 . 360 . 359 . 358 | 2. 954 . 953 . 952 . 950 . 948 . 947 | 5. 907 . 905 . 904 . 900 . 897 . 895 | 8. 861 . 858 . 856 . 850 . 845 . 842 | 11. 814 . 811 . 807 . 800 . 793 . 790 | 17. 721 . 716 . 711 . 701 . 690 . 685 | | | | | | |
| 20 22½ 25 26¼ 27½ | 2. 357 . 356 . 354 . 354 . 353 | 2.947 .945 .943 .942 .941 | 5. 893 . 890 . 886 . 884 . 883 | 8. 840 . 835 . 829 . 827 . 824 | 11. 786 . 779 . 772 . 769 . 765 | 17. 680 . 669 . 658 . 653 . 648 | | | | | | |
| 10 12½ 13¾ 15 17½ | 2. 352 . 350 . 350 . 349 . 347 | 2. 940 . 938 . 937 . 936 . 934 | 5, 879 . 876 . 874 . 872 . 869 | 8. 819 . 813 . 811 . 808 . 803 | 11. 758 . 751 . 748 . 744 . 737 | 17. 638 . 627 . 622 . 616 . 606 | | | | | | |
| 0 11/4 12/2 15 17/4 18/4 | 2. 346 . 345 . 345 . 343 . 342 . 341 | 2. 933 . 932 . 931 . 929 . 927 . 926 | 5, 865 . 863 . 862 . 858 . 855 . 855 | 8. 798 . 795 . 792 . 787 . 782 . 779 | 11, 730 . 727 . 723 . 716 . 709 . 705 | 17. 595 . 590 . 585 . 574 . 564 . 558 | | | | | | |
| 0 21/2 5 61/4 71/2 | 2. 340 . 339 . 338 . 337 . 336 | 2. 925 . 924 . 922 . 921 . 920 | 5. 851 . 847 . 844 . 842 . 840 | 8. 776 . 777 . 766 . 763 . 761 | 11. 702 . 695 . 688 . 684 . 681 | 17. 553 . 542 . 532 . 526 . 521 | | | | , | | |
| SAN PERSON DELLE SESSION DELLE | 21/2 56/3/2 02/3/3 | 244 389 388 388 388 388 388 388 388 388 388 | 24 | 24 389 986 973 5 388 985 986 969 5 388 985 984 968 384 387 984 968 968 324 386 983 960 959 334 380 970 959 957 5 382 978 956 959 334 970 957 967 962 01 2 380 2 974 5 949 947 14 379 974 947 947 24 377 969 938 973 945 37 375 969 938 937 224 375 968 937 00 2 374 2 967 5 935 384 370 963 928 374 960 938 35 367 950 918 384 366 | 24/2 389 986 .999 954 834 .985 .989 .951 834 .984 .988 .951 22/2 .386 .983 .966 .949 22/2 .384 .980 .959 .939 334 .383 .979 .967 .936 54 .382 .978 .956 .933 54 .382 .978 .956 .936 71/2 .381 .976 .952 .928 01 2.380 2.974 5.949 8.923 11/4 .379 .974 .947 .921 22/2 .378 .973 .945 .918 384 .375 .969 .938 .908 384 .375 .968 .937 .906 22/2 .373 .964 .928 .897 384 .370 .963 .928 .897 384 | 244 389 .986 .973 .954 .986 .989 .954 .938 .984 .989 .954 .939 .954 .939 .944 .939 .944 .932 .932 .932 .932 .932 .932 .944 .989 .959 .939 .918 .933 .91 .918 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .933 .915 .942 .928 .902 .928 .904 .947 .921 .942 .933 .915 .934 .915 .934 .915 .934 .915 .934 .931 .942 .913 .884 .872 .942 .933 .941 .942 .913 .884 .8 | 245 389 .986 .969 .964 .938 .906 .964 .939 .908 .944 .939 .908 .944 .939 .908 .961 .935 .903 .906 .949 .932 .908 .903 .906 .949 .932 .908 .903 .908 .909 .909 .909 .918 .877 .938 .906 .959 .939 .918 .877 .957 .938 .915 .872 .872 .872 .872 .978 .956 .933 .915 .872 .872 .974 .947 .921 .994 .857 .952 .928 .904 .857 .957 .936 .915 .867 .872 .973 .944 .947 .921 .994 .857 .937 .944 .947 .921 .994 .841 .826 .837 .937 .942 .913 .884 .826 .837 .937 .945 .918 .891 . | 246 | 196 | 2-3 | | |

114 TABLES FOR CONSTRUCTION OF POLYCONIC PROJECTIONS

Table 4.—Coordinates for the projection of maps, scale 24000—Continued

| | | Absci | ssas of dev | veloped p | arallel | | Ordinates of develo meridional | | lel and |
|--|---|---|--|--|---|---|---|---|---------------------------|
| Lati- tude of parallel | | | Longitud | le interva | 1 | | Latitude and longi- Merid- | | |
| | l' | 11/4' | 21/2' | 33/4' | 5′ | 73/2' | tude intervals | ional distance | of de velope parall |
| 0 00 02½ 03¼ 05 07½ | Inches 2, 335 333 333 332 330 | Inches 2. 918 . 917 . 916 . 915 . 913 | Inches 5. 837 . 833 . 831 . 830 . 826 | Inches 8. 755 . 750 . 747 . 745 . 739 | Inches 11. 674 . 667 . 663 . 659 . 652 | Inches 17. 510 . 500 . 494 . 489 . 479 | (13, 23, 33, 5) For latitude 40° 61, 61, 61, 61, 61, 61, 61, 61, 61, 61, | 15. 178 | Inch 0.0 .0 .0 |
| 10 1114 1212 15 1712 1834 | 2. 329 . 328 . 328 . 326 . 325 . 324 | 2. 911 . 910 . 910 . 908 . 906 . 905 | 5. 823 . 821 . 819 . 815 . 812 . 810 | 8. 734 . 731 . 729 . 723 . 718 . 715 | 11. 645 . 642 . 638 . 631 . 624 . 620 | 17. 468 . 462 . 457 . 446 . 436 . 430 | 73/10 12/15/15/15/15/15/15/15/15/15/15/15/15/15/ | 30. 357 37. 947 45. 536 | 0.0 |
| 20 22½ 25 26¼ 27½ | 2. 323 . 322 . 321 . 320 . 319 | 2. 904 . 902 . 901 . 900 . 899 | 5. 808 . 805 . 801 . 799 . 798 | 8. 712 . 707 . 702 . 699 . 696 | 11. 617 . 610 . 602 . 599 . 595 | 17. 425 . 414 . 404 . 398 . 393 | For latitude 41° 6 6 7 7 10 | 7. 590 11. 386 15. 181 18. 977 22. 772 30. 362 | .0 |
| 30 32½ 33¾ 35 37½ | 2. 318 . 316 . 315 . 315 . 313 | 2. 897 . 895 . 894 . 893 . 893 | 5, 794 , 790 , 789 , 787 , 783 | 8. 691 . 686 . 683 . 680 . 675 | 11. 588 . 581 . 577 . 574 . 567 | 17. 382 . 371 . 366 . 361 . 350 | [12] | 45. 544 | 0.0 |
| 40 411/4 421/2 45 471/2 483/4 | 2. 312 . 311 . 310 . 309 . 308 . 307 | 2, 890 . 889 . 888 . 886 . 884 . 884 | 5. 780 . 778 . 776 . 772 . 769 . 767 | 8. 670 . 667 . 664 . 659 . 653 . 651 | 11. 559 . 556 . 552 . 545 . 538 . 534 | 17. 239 . 334 . 328 . 317 . 306 . 301 | For latitude 42° 614, 10' 1214, 15' | 15. 184 18. 980 22. 776 30. 367 | .00 |
| 50 52½ 55 56¼ 57½ | 2. 306 . 305 . 303 . 303 . 302 | 2. 883 . 881 . 879 . 878 . 877 | 5. 765 . 762 . 758 . 756 . 754 | 8. 648 . 642 . 637 . 634 . 632 | 11. 531 . 523 . 516 . 512 . 509 | 17. 296 . 285 . 274 . 269 . 263 | 1.7 | 10.001 | |
| 00 02½ 03¾ 05 07½ | 2. 300 . 299 . 298 . 297 . 296 | 2. 875 . 874 . 873 . 872 . 870 | 5. 751 . 747 . 745 . 744 . 740 | 8. 626 . 621 . 618 . 615 . 610 | 11. 502 . 494 . 491 . 487 . 480 | 17. 252 . 241 . 236 . 231 . 220 | | | |
| 10 1114 1214 15 1714 1834 | 2. 295 . 294 . 293 . 292 . 290 . 289 | 2. 868 . 867 . 866 . 864 . 863 . 862 | 5. 736 . 734 . 733 . 729 . 725 . 724 | 8. 604 . 602 . 599 . 594 . 588 . 585 | 11. 473 | 17. 209 | | | |
| 20 22½ 25 26¾ 27½ | 2 289 · 287 · 286 · 285 · 284 | 2. 862 . 859 . 857 . 856 . 855 | 5. 722 . 718 . 714 . 713 . 711 | 8. 583 . 577 . 572 . 569 . 566 | 11. 443 . 436 . 429 . 425 . 422 | 17. 165 . 154 . 143 . 138 . 132 | | | |
| 30 32½ 33¾ 35 37½ | 2. 283 . 281 . 281 . 280 . 279 | 2.854 .852 .851 .850 .848 | 5. 707 . 703 . 702 . 700 . 696 | 8. 561 . 555 . 552 . 550 . 544 | 11. 414 . 407 . 403 . 400 . 392 | 17. 121 . 110 . 105 . 099 . 088 | | | |
| 40 4114 4214 45 4714 4884 | 2. 277 . 276 . 276 . 274 . 273 . 272 | 2. 846 . 845 . 844 . 843 . 841 . 840 | 5. 692 . 691 . 689 . 685 . 681 . 680 | 8. 539 . 536 . 533 . 528 . 522 . 519 | 11. 385 . 381 . 378 . 370 . 363 . 359 | 17. 077 . 072 . 086 . 055 . 044 . 039 | | | |
| 50 52½ 55 56¼ 57½ | 2. 271 . 270 . 268 . 267 . 267 | 2.839 .837 .835 .834 .833 | 5. 678 . 674 . 670 . 669 . 667 | 8. 517 . 511 . 506 . 503 . 500 | 11. 356 . 348 . 341 . 337 333 | 17. 033 . 022 . 011 . 006 . 000 | | | |
| 00 | 2. 265 | 2. 831 | 5. 663 | 8. 494 | 11. 326 | 16. 989 | | | |

Table 4.—Coordinates for the projection of maps, scale 24800—Continued

| | | | Abscis | sas of dev | eloped pa | rallel | | Ordinates of de meridion | veloj nal d | ped paralistances | lel and |
|-----|--|--|---|---|--|--|---|-----------------------------|--|--|---|
| tud | ti- le of allel | | | Longitude | interval | | | Latitude and lor | | Merid- | Ordi- nate of de- |
| | | 1' | 11/4' | 21/2' | 3¾′ | 5 | 734' | tude intervals | 3 | distance | veloped parallel |
| | 00 02½ 03¾ 05 07½ | Inches 2. 265 264 263 262 261 | Inches 2. 831 . 830 . 829 . 828 . 826 | Inches 5. 663 . 659 . 657 . 656 . 652 | Inches 8. 494 . 489 . 486 . 483 . 478 | Inches 11. 326 . 319 . 315 . 311 . 304 | Inches 16. 989 . 978 . 972 . 967 . 956 | For latitude 42° | 11/4 21/2 33/4 5 61/4 71/2 10 | Inches 3. 796 7. 592 11. 388 15. 184 18. 980 22. 776 | Inch 0.000 .001 .003 .006 .009 |
| | 10 11½ 12½ 15 17½ | 2. 259 . 259 . 258 . 256 . 255 | 2. 824 . 823 . 822 . 820 . 819 . 818 | 5. 648 646 644 641 637 635 | 8. 472 . 470 . 467 . 462 . 456 . 453 | 11. 296 . 293 . 289 . 282 . 274 . 270 | 16. 945 . 939 . 933 . 922 . 911 . 906 | | 121/2 | 30. 367 37. 960 45. 551 | . 022 . 034 . 050 |
| | 20 22½ 25 26¼ 27½ | 2. 253 2. 253 2. 252 2. 250 2. 250 249 | 2.817 .815 .813 .812 .811 | 5. 633 . 630 . 626 . 624 . 622 | 8. 450 . 444 . 439 . 436 . 433 | 11. 267 . 259 . 252 . 248 . 244 | 16. 900 . 889 . 878 . 872 . 867 | For latitude 43° | 11/4 21/2 33/4 5 61/4 71/2 10 121/2 | 7. 593 11. 390 15. 186 18. 983 22. 780 30. 373 | . 001 . 003 . 006 . 009 . 012 . 022 . 035 |
| | 30 32½ 33¾ 35 37½ | . 245 | 2. 809 . 807 . 807 . 805 . 804 | 5. 618 . 615 . 613 . 611 . 607 | 8. 428 . 422 . 419 . 416 . 411 | 11. 237 . 229 . 226 . 222 . 215 | 16. 855 . 844 . 839 . 833 . 822 | | 11/4 | 3. 797 7. 594 | 0.000 |
| | 40 41 ¹ / ₄ 42 ¹ / ₂ 45 47 ¹ / ₂ 48 ³ / ₄ | . 238 | 2.802 .801 .800 .798 .796 .795 | 5. 604 . 602 . 600 . 596 . 592 . 590 | 8, 405 . 402 . 400 . 394 . 388 . 386 | 11. 207 . 203 . 200 . 192 . 184 . 181 | 16. 811 . 805 . 799 . 788 . 777 . 771 | For latitude 44° | 334 5 614 71/2 10 121/2 15 | 15. 189 18. 987 22. 784 30. 378 | .003 .006 .009 .012 .022 .035 |
| | 50 52½ 55 56¼ 57½ | . 232 | 2, 794 , 792 , 790 , 790 , 789 | 5. 589 . 585 . 581 . 579 . 577 | 8. 383 . 377 . 371 . 369 . 366 | 11, 177 . 169 . 162 . 158 . 154 | 16. 766 . 754 . 743 . 737 . 732 | | | | <u> </u> |
| 43 | 00 02 ¹ / ₂ 03 ³ / ₄ 05 07 ¹ / ₂ | . 227 | 2. 787 . 785 . 784 . 783 . 781 | 5. 574 . 570 . 568 . 566 . 562 | 8. 360 . 355 . 352 . 349 . 343 | 11. 147 . 139 . 136 . 132 . 124 | 16. 721 . 709 . 704 . 698 . 687 | | | | |
| | 10 11½ 12½ 15 17½ 18¾ | $\begin{bmatrix} 2 \\ 2 \\ 2 \\ 2 \end{bmatrix}$ $\begin{bmatrix} 222 \\ 220 \\ 219 \end{bmatrix}$ | 2. 779 . 778 . 777 . 775 . 774 . 773 | 5. 558 . 557 . 555 . 551 . 547 . 545 | 8. 338 . 335 . 332 . 326 . 321 . 318 | 11. 117 . 113 . 109 . 102 . 094 . 090 | 16. 675 . 670 . 664 652 . 641 . 635 | | | | |
| | 20 22½ 25 26½ 27½ | 2. 217 . 216 . 214 . 213 . 213 | 2. 772 . 770 . 768 . 767 . 766 | 5. 543 . 539 . 536 . 534 . 532 | 8. 315 .309 .304 .301 .298 | 11. 086 . 079 . 071 . 068 . 064 | 16. 630 . 618 . 607 . 601 . 596 | | | | |
| | 30 32½ 33¾ 35 37½ | . 209 . 208 . 207 | 2. 764 . 762 . 761 . 760 . 758 | . 517 | 8. 292 . 286 . 284 . 281 . 275 | 11. 056 . 049 . 045 . 041 . 033 | 16. 584 . 573 . 567 . 561 . 550 | | | | |
| | 40 41 ¹ / _{42¹/₄₅ 45 47¹/_{48³}} | 2 . 204 . 202 2 . 201 | . 755 . 754 . 753 . 751 | 5. 513 . 511 . 509 . 505 . 501 . 499 | 8. 269 . 266 . 263 . 258 . 252 . 249 | 11. 026 . 022 . 018 . 010 . 003 10. 999 | 16. 538 . 533 . 527 . 516 . 504 . 498 | | | | |
| | 50 521 55 561 571 | 2. 199 . 197 . 196 . 195 | 2. 749 . 747 . 745 . 744 | 5. 498 . 494 . 490 . 488 | 8. 246 . 241 . 235 . 232 . 229 | 10. 995 . 987 . 980 . 976 . 972 | . 481 . 470 . 464 | | | | |
| 44 | 00 | 2. 193 | 2. 741 | 5. 482 | 8. 223 | 10. 964 | 16. 447 | | | | |

116 Tables for construction of polyconic projections

Table 4.—Coordinates for the projection of maps, scale 24 100 — Continued

| | | | Abscis | sas of dev | reloped pa | arallel | | Ordinates of de meridio | velo nal d | ped parall listances | lel and |
|------|--|---|---|---|--|---|--|----------------------------|--|--|---|
| tud | ati- le of allel | |] | Longitude | interval | | | Latitude and | | Merid- | Ordi- nate of de- |
| | | 1' | 11/4' | 21/2' | 3¾′ | 5′ | 71/2' | longitude interv | ais | distance | veloped parallel |
| • 44 | , 00 02½ 03¾ 05 07½ | Inches 2, 193 . 191 . 191 . 190 . 188 | Inches 2, 741 . 739 . 738 . 737 . 735 | Inches 5. 482 . 478 . 476 . 475 . 471 | Inches 8, 223 , 218 , 215 , 212 , 206 | Inches 10. 964 . 957 . 953 . 949 . 941 | Inches 16. 447 . 435 . 429 . 424 . 412 | For latitude 44° | 11/4 21/2 33/4 5 61/4 71/2 | Inches 3, 797 7, 594 11, 392 15, 189 18, 987 22, 784 | Inch 0. 000 . 001 . 003 . 006 . 009 |
| | 10 · 11½ 12½ 15 17½ 18¾ | 2. 187 . 186 . 185 . 184 . 182 . 181 | 2. 733 . 732 . 732 . 730 . 728 . 727 | 5. 467 . 465 . 463 . 459 . 455 . 453 | 8, 200 . 197 . 195 . 189 . 183 . 180 | 10. 934 . 930 . 926 . 918 . 911 . 907 | 16. 401 . 395 . 389 . 376 . 366 . 360 | | 110 121/2 | 30. 378 | . 022 . 038 . 050 |
| | 20 22½ 25 26¼ 27½ | 2. 181 . 179 . 177 . 177 . 176 | 2. 726 . 724 . 722 . 721 . 720 | 5, 451 . 448 . 444 . 442 . 440 | 8. 177 . 171 . 166 . 163 . 160 | 10. 903 . 895 . 887 . 884 . 880 | 16. 354 . 343 . 331 . 325 . 320 | For latitude 45° | 21/2 33/4 5 61/4 71/2 10 121/2 | 7. 596 11. 394 15. 192 18. 990 22. 788 30. 384 | . 001 . 003 . 006 . 001 . 015 . 025 . 038 |
| | 30 32½ 33¾ 35 37½ | 2. 174 . 173 . 172 . 171 . 170 | 2. 718 .716 .715 .714 .712 | 5. 436 . 432 . 430 . 428 . 424 | 8. 154 . 148 . 145 . 142 . 137 | 10. 872 . 864 . 860 . 856 . 849 | 16. 308 . 296 . 291 . 285 . 273 | | 11/4 21/2 33/4 | 45, 576 | 0, 000 |
| | 40 4114 4214 45 4714 4814 | 2. 168 . 167 . 167 . 165 . 164 . 163 | 2. 710 . 709 . 708 . 706 . 704 . 703 | 5. 420 . 419 . 417 . 413 . 409 . 407 | 8. 131 .128 .125 .119 .113 .110 | 10. 841 . 837 . 833 . 825 . 818 . 814 | 16. 261 . 256 . 250 . 238 . 227 . 221 | For latitude 46° | 33/4 5 61/4 71/2 10 121/2 15 | 15, 194 18, 994 22, 792 30, 389 | .00 .00 .00 .01 .02 .03 |
| | 50 52½ 55 56¼ 57½ | 2, 162 . 160 . 159 . 158 . 157 | 2. 702 . 701 . 699 . 698 . 697 | 5. 405 . 401 . 397 . 395 . 393 | 8, 107 . 102 . 096 . 093 . 090 | 10. 810 . 802 . 794 . 790 . 787 | 16. 215 . 203 . 191 . 186 . 180 | | | 1 | |
| 45 | 00 021/2 033/4 05 071/2 | 2. 156 . 154 . 153 . 153 . 151 | 2. 695 . 693 . 692 . 691 . 689 | 5, 389 . 385 . 383 . 381 . 378 | 8. 084 . 078 . 075 . 072 . 066 | 10. 779 . 770 . 767 . 763 . 755 | 16, 168 . 156 . 150 . 144 . 133 | | | | |
| | 10 11½ 12½ 15 17½ 18¾ | 2. 149 . 149 . 148 . 146 . 145 . 144 | 2, 687 . 686 . 685 . 683 . 681 | 5, 374 . 372 . 370 . 366 . 362 . 360 | 8. 061 . 058 . 055 . 049 . 043 . 040 | 10. 747 . 743 . 740 . 732 . 724 . 720 | 16, 121 115 109 .097 .086 .080 | | | | |
| | 20 22½ 25 26¼ 27½ | 2. 143 . 142 . 140 . 139 . 139 | 2. 679 . 677 . 675 . 674 . 673 | 5, 358 . 354 . 350 . 348 . 346 | 8. 037 . 031 . 025 . 022 . 019 | 10, 716 . 708 . 700 . 696 . 692 | 16. 074 . 062 . 050 . 045 . 039 | | | | |
| | 30 32½ 33¾ 35 37½ | . 134 | 2, 671 . 669 . 668 . 667 . 665 | 5. 342 . 338 . 336 . 334 . 330 | 8. 013 . 007 . 004 . 001 7. 996 | 10. 685 . 677 . 673 . 669 . 661 | 16, 027 . 015 . 009 . 003 15, 991 | | | | |
| | 40 411/4 421/2 45 471/2 481/4 | . 127 | 2. 663 . 662 . 661 . 659 . 657 . 656 | 5. 326 . 324 . 323 . 319 . 315 . 313 | 7. 990 . 987 . 984 . 978 . 972 . 969 | 10. 653 . 649 . 645 . 637 . 629 . 625 | 15. 979 . 973 . 968 . 956 . 944 . 938 | | | | |
| | 50 52½ 55 56¼ 57½ | 2. 124 . 123 . 121 . 120 | 2. 655 . 653 . 651 . 650 . 649 | 5. 311 . 307 . 303 . 301 . 299 | 7. 966 . 960 . 954 . 951 . 948 | 10. 621 . 613 . 605 . 601 . 597 | 15, 932 . 920 . 908 . 902 . 896 | | | | |
| 46 | 00 | 2.118 | 2. 647 | 5, 295 | 7. 942 | 10, 590 | 15, 884 | | | | |

TABLE 4.—Coordinates for the projection of maps, scale 24100—Continued

| | | | Absci | ssas of de | veloped p | arallel | | Ordinates of de meridio | | ped parali listances | lel and |
|----------|--|--|--|---|---|---|---|----------------------------------|--|--|---|
| tu | ati- de of rallel | | | Longitud | e interval | | | | | | Ordi- |
| J | also | 1' | 11/4' | 21/2' | 33/4' | 5′ | 71/2' | Latitude and lo tude interval | | Merid- ional distance | nate of de- veloped parallel |
| 16 46 | 00 02½ 03¾ 05 07½ | 2. 118 2. 116 . 116 . 115 . 113 | Inches 2. 647 . 645 . 644 . 643 . 641 | Inches 5. 295 . 291 . 289 . 287 . 283 | Inches 7. 942 . 936 . 933 . 930 . 924 | Inches 10. 590 . 582 . 578 . 574 . 566 | Inches 15. 884 . 872 . 867 . 861 . 849 | For latitude 46° | 11/4 21/2 33/4 5 61/4 71/2 | 15. 194 | Inch 0.000 .001 .003 .006 .009 |
| | 10 111/4 121/2 15 171/2 183/4 | 2, 112 .111 .110 .108 .107 .106 | 2. 639 . 638 . 637 . 635 . 633 | 5. 279 . 277 . 275 . 271 . 267 . 265 | 7. 918 . 915 . 912 . 906 . 900 . 897 | 10. 558 . 554 . 550 . 542 . 534 . 530 | 15. 837 . 831 . 825 . 813 . 801 . 795 | | 10 12½ 15 | 30. 389 37. 987 45. 584 | . 022 . 035 . 050 |
| | 20 22½ 25 26¼ 27½ | 2. 105 . 104 . 102 . 101 . 100 | 2, 631 . 629 . 627 . 626 . 625 | 5. 263 . 259 . 255 . 253 . 251 | 7. 894 . 888 . 882 . 879 . 876 | 10. 526 . 518 . 510 . 506 . 502 | 15. 789 . 777 . 765 . 759 . 753 | For latitude 47° | 11/4 21/2 33/4 5 61/4 71/2 10 | 18. 197 18. 997 22. 796 30. 394 | 0,000 .001 .003 .006 .009 .012 |
| | 30 32½ 33¾ 35 37½ | 2. 099 . 097 . 096 . 096 . 094 | 2. 623 . 621 . 620 . 619 . 617 | 5. 247 . 243 . 241 . 239 . 235 | 7. 870 . 864 . 861 . 858 . 852 | 10. 494 . 486 . 482 . 478 . 470 | 15. 741 . 729 . 723 . 717 . 705 | | 11/4 | 37. 994 45. 592 3. 800 7. 600 | 0.000 0.001 |
| | 40 411/4 421/2 45 471/4 483/4 | 2. 092 . 092 . 091 . 089 . 087 . 087 | 2.615 .614 .613 .611 .609 .608 | 5. 231 . 229 . 227 . 223 . 219 . 217 | 7. 846 . 843 . 840 . 834 . 828 . 825 | 10. 462 . 458 . 454 . 446 . 438 . 434 | 15, 692 . 686 . 680 . 668 . 656 . 650 | For latitude 48° | 21/2 33/4 5 61/4 71/2 10 121/2 15 | 15, 200 19, 000 | .008 .006 .009 .012 .021 .035 |
| | 50 52½ 55 56¼ 57½ | 2. 086 . 084 . 083 . 082 . 081 | 2.607 .605 .603 .602 .601 | 5. 215 . 211 . 207 . 205 . 203 | 7. 822 .816 .810 .807 .804 | 10. 429 . 421 . 413 . 109 . 405 | 15. 644 . 632 . 620 . 614 608 | | | 40.000 | .000 |
| 47 | 00 02½ 03¾ 05 07⅓ | 2. 079 . 078 . 077 . 076 . 075 | 2. 599 . 597 . 596 . 595 . 593 | 5. 199 . 195 . 192 . 190 . 186 | 7. 798 . 792 . 789 . 786 . 780 | 10. 397 . 389 . 385 . 381 . 373 | 15. 596 . 584 . 577 . 571 . 559 | | | | |
| | 10 111/4 121/2 15 171/2 181/4 | 2. 073 . 072 . 071 . 070 . 068 . 067 | 2, 591 . 590 . 589 . 587 . 585 . 584 | 5. 182 . 180 . 178 . 174 . 170 . 168 | 7. 774 . 771 . 768 . 763 . 755 . 752 | 10. 365 . 361 . 357 . 349 . 341 . 336 | 15. 547 . 541 . 535 . 523 . 511 . 505 | | | | |
| | 20 22½ 25 26¼ 27½ | 2. 066 . 065 . 063 . 062 . 062 | 2, 583 . 581 . 579 . 578 . 577 | 5. 166 . 162 . 158 . 156 . 154 | 7. 749 . 743 . 737 . 734 . 731 | 10. 332 . 324 . 316 . 312 . 308 | 15. 499 . 486 . 474 . 468 . 462 | | | | |
| | 30 321/4 333/4 35 371/4 | 2. 060 . 058 . 058 . 057 . 055 2. 053 | 2. 575 . 573 . 572 . 571 . 569 2. 566 | 5. 150 . 146 . 144 . 142 . 138 | 7. 725 .719 .716 .713 .706 | 10. 300 . 292 . 288 . 284 . 275 | 15. 450 . 437 . 431 . 425 . 413 | | | | |
| | 411/4 421/2 45 471/2 483/4 | . 053 . 052 . 050 . 049 . 048 | 2, 566 , 566 , 565 , 563 , 561 , 560 | 5. 134 . 131 . 129 . 125 . 121 . 119 | 7. 700 . 697 . 694 . 688 . 682 . 679 | 10. 267 . 263 . 259 . 251 . 243 . 239 | 15. 401 . 394 . 388 . 376 . 364 . 358 | | | | |
| | 50 52½ 55 56¼ 57½ | 2. 047 . 045 . 044 . 043 . 042 | 2, 559 . 557 . 555 . 553 . 552 | 5. 117 . 113 . 109 . 107 . 105 | 7. 676 . 670 . 664 . 660 . 657 | 10. 234 . 226 . 218 . 214 . 210 | 15. 352 . 339 . 327 . 321 . 315 | | | | |
| 8 | 00 | 2.040 | 2. 550 | 5. 101 | 7. 651 | 10. 202 | 15. 302 | | | | |

118 TABLES FOR CONSTRUCTION OF POLYCONIC PROJECTIONS

Table 4.—Coordinates for the projection of maps, scale 24000—Continued

| | | | Absci | ssas of de | veloped p | arallel | | Ordinates of develo | ped parali | lel and |
|----|---|---|--|---|--|---|--|--|---|---|
| tu | ati- de of rallel | | | Longitud | e interva | l | | Latitude and longi- | Merid- | Ordi- nate |
| | | 1′ | 11/4' | 21/2′ | 33/4' | 5' | 73/2' | tude intervals | ional distance | of de- veloped parallel |
| 48 | 00 02½ 03¾ 05 07½ | Inches 2. 040 . 039 . 038 . 037 . 035 | Inches 2, 550 548 547 546 544 | Inches 5, 101 . 097 . 095 . 093 . 088 | Inches 7. 651 . 645 . 642 . 639 . 633 | Inches 10. 202 . 193 . 189 . 185 . 177 | Inches 15, 302 . 290 . 284 . 278 . 265 | for latitude 48° | 15. 200 | Inch 0.000 .001 .003 .005 .009 |
| | 10 1114 121/2 15 171/2 188/4 | 2. 034 . 033 . 032 . 030 . 029 . 028 | 2. 542 . 541 . 540 . 538 . 536 . 535 | 5. 084 . 082 . 080 . 076 . 072 . 070 | 7. 626 . 623 . 620 . 614 . 608 . 605 | 10. 169 . 165 . 160 . 152 . 144 . 140 | 15. 253 . 247 . 241 . 228 . 216 . 210 | 10 121/15 | 30. 400 38. 001 45. 600 | . 022 . 034 . 050 |
| | 20 22½ 25 26¼ 27½ | 2. 027 . 025 . 024 . 023 . 022 | 2. 534 . 532 . 530 . 529 . 528 | 5. 068 . 064 . 060 . 058 . 055 | 7. 602 . 596 . 589 . 586 . 583 | 10. 136 . 127 . 119 . 115 . 111 | 15. 204 . 191 . 179 . 173 . 166 | For latitude 49° 61, 73, 10 | 7. 601 11. 402 15. 202 19. 004 22. 804 30. 405 | 0.000 .001 .003 .005 .009 .012 .022 |
| | 30 32½ 33¾ 35 37½ | 2. 020 . 019 . 018 . 017 . 016 | 2. 526 . 524 . 523 . 521 . 519 | 5. 051 . 047 . 045 . 043 . 039 | 7. 577 . 571 . 568 . 564 . 558 | 10. 103 . 094 . 090 . 086 . 078 | 15. 154 . 142 . 135 . 129 . 117 | 113/15/ (13 | 45. 608 | 0.000 |
| | 40 4114 421/2 45 471/2 483/4 | 2.014 .013 .012 .011 .009 .008 | 2.517 .516 .515 .513 .511 .510 | 5. 035 . 033 . 031 . 027 . 022 . 020 | 7, 552 . 549 . 546 . 540 . 533 . 530 | 10. 069 . 065 . 061 . 053 . 045 . 040 | 15. 104 . 098 . 092 . 079 . 067 . 061 | For latitude 50° 61, 71, 10, 123, 15 | 15. 205 19, 007 22. 808 30. 411 | . 003 . 005 . 009 . 012 . 022 . 034 . 049 |
| | 50 52½ 55 56¾ 57½ | 2,007 .006 .004 .003 .002 | 2, 509 . 507 . 505 . 504 . 503 | 5. 018 . 014 . 010 . 008 . 006 | 7. 527 . 521 . 515 . 512 . 508 | 10. 036 . 028 . 020 . 015 . 011 | 15. 054 . 042 . 029 . 023 . 017 | | 1 25.021 | |
| 49 | 00 02½ 03¾ 05 07⅓ 10 11⅓ 12½ 15 17½ 18¾ | 2. 001 1. 999 . 998 . 997 . 996 1. 994 . 993 . 992 . 991 . 989 | 2.501 .499 .498 .497 .494 2.492 .491 .490 .488 .486 | 5. 001 4. 997 . 995 . 993 . 989 4. 985 . 983 . 981 . 976 . 972 | 7. 502 . 496 . 493 . 490 . 483 7. 477 . 474 . 471 . 465 . 458 | 10. 003 9. 995 990 986 978 9. 970 965 961 953 | 15. 004 14. 992 . 986 . 979 . 967 14. 954 . 948 . 942 . 929 . 917 | | | |
| | 18¾ 20 22½ 25 26¼ 27½ | . 988 1. 987 . 986 . 984 . 983 . 982 | . 485 2. 484 . 482 . 480 . 479 . 478 | . 970 4. 968 . 964 . 960 . 957 . 955 | . 455 7. 452 . 446 . 439 . 436 . 433 | 9.936 9.936 928 919 915 | . 910 14. 904 . 891 . 879 . 872 . 866 | | | |
| | 30 32½ 33¾ 35 37⅓ | 1. 980 . 979 . 978 . 977 . 975 | 2, 476 . 473 . 472 . 471 . 469 | 4. 951 . 947 . 945 . 943 . 939 | 7. 427 . 420 . 417 . 414 . 408 | 9. 902 . 894 . 890 . 886 . 877 | .14. 854 . 841 . 835 . 828 . 816 | | | |
| | 40 411/4 423/2 45 473/6 483/4 | 1. 974 . 973 . 972 . 970 . 969 . 968 | 2. 467 . 466 . 465 . 463 . 461 . 460 | 4. 934 . 932 . 930 . 926 . 922 . 920 | 7. 401 . 398 . 395 . 389 . 383 . 379 | 9. 869 . 864 . 860 . 852 . 843 . 839 | 14. 803 . 797 . 790 . 778 . 765 . 759 | | | |
| | 50 52½ 55 56¾ 57½ | 1. 967 . 965 . 964 . 963 . 962 | 2. 459 . 457 . 454 . 453 . 452 | 4. 918 . 913 . 909 . 907 . 905 | 7. 376 . 370 . 363 . 360 . 357 | 9. 835 . 826 . 818 . 814 . 810 | 14. 753 . 740 . 727 . 721 . 714 | | | |
| 50 | 00 | 1.960 | 2, 450 | 4.901 | 7. 351 | 9. 801 | 14, 702 | | | |

